

# The Mining Journal

## AND COMMERCIAL GAZETTE.

No. 21. Vol. 2.

LONDON, SATURDAY, JANUARY 16, 1836.

Price 7d.

**ON SALE.**—At the Office of CHARLES MANN, Stock and Share Broker, 7, Old Broad-street.  
Shares in several of the best Mining Companies of Cornwall that are now dividing profits.  
Shares in the Iron Railways, Gas, Fire, and Life Insurance Companies, &c. &c.  
Likewise United States' Stocks and Bank Shares, that are now paying a dividend of 5 per Cent.

### BISSOE BRIDGE MINING ASSOCIATION.

**THE SHAREHOLDERS** are hereby informed, that the payment of the third instalment of £1 per Share, due on the 30th inst., is further postponed to the 29th of February, next.  
By order of the Directors,  
BAKENDALE, TATHAM, UPTON, and JOHNSON.  
7, Great Winchester-street, 15th Jan. 1836.

### COLOMBIAN MINING ASSOCIATION.

**THE ELEVENTH GENERAL ANNUAL MEETING** of the Proprietors of this Association will be held at the Office of the Association, on Wednesday, the 23rd day of February, next, at one o'clock precisely.  
JOHN CHAPMAN, Sec.  
3, Freeman's-court, Cornhill, 7th January, 1836.

### TO MINING COMPANIES, AGENTS, AND OTHERS.

**A PERSON** respectfully connected, who has been accustomed to the Management of Mines, and Assaying of Ores for upwards of 20 years, is desirous of a situation as Secretary or Manager, or to inspect, Dial, Plan, and Report on Mines, either at home or abroad. For testimonials of character and ability, apply by letter (post paid) to Mr. Dean, 248, High Holborn, London.

**TREVORGUS SILVER, COPPER, and MINING COMPANY.**—The Directors hereby give notice of a CALL upon the Shareholders of 10s. per share, to be paid at Sir Charles Price, Bart., and Co.'s, King William-street, Mansion-house, London, on or before the 23rd day of January next, or the shares will be liable to forfeiture according to the terms and conditions of the Company. It will be necessary for the bankers' receipt, together with the scrip certificates, to be left at the office for two days, that the payment may be duly certified.—I, Lawrence-lane, Chesapeake, 22nd December, 1835.  
The highly satisfactory Reports from the Mines may be inspected at the office.

### MOUNTS BAY SILVER-LEAD, COPPER, AND TIN MINES, IN CORNWALL.

**APPLICATIONS FOR SHARES** in this COMPANY, addressed to C. R. ROBERTS, Secretary, 7, Gray's-inn-square, London, (post paid) where Prospectuses may be had.

### ROYAL COBRE MINING ASSOCIATION.

23d December 1835.

**NOTICE** is hereby given, that all holders of Shares in the above Company, who shall have paid up their instalments then due, may receive a Dividend of Thirty-two Shillings per Share, on application at the house of Sir James Esdaile & Co., Lombard-street, on and after the 25th day of January next, between the hours of twelve and two.  
By order of the Court of Directors, W. LECKIE, Sec.

### UNITED KENWYN and KEA MINING COMPANY. Capital £25,000, in 5,000 Shares of £5 each.

#### DIRECTORS.

John Macdonnell, Esq. | William Thompson, Esq.  
John South, Esq. | T. P. Champion, Esq.

Bankers—Messrs. Sir Charles Price, Bart. and Co.

Solicitors—Messrs. Baxendale, Tatham, Upton, and Johnson.  
The Mine called Wheal Daniel is situated in the parish of Kenwyn, about five miles west of Truro; it is bounded on the east by the parish of Ken, and contains several well known valuable and very productive Lodes of Tin and Copper, which have already yielded, in the adjoining Mine to the westward, ore to the value of more than half a million sterling. It is now proposed to unite with another valuable and extensive grant of mining ground, immediately adjoining the Wheal Daniel on the east, and into which the same lodes are known to run, and of which, as well as of Wheal Daniel, leases have been newly granted, at reduced and moderate rates, for twenty-one years.

So much has been done by former proprietors in cutting the above adits, sinking shafts, and driving a deep level cross cut to within a few fathoms of cutting the lode, that the advantages which so many preparatory works must offer to any new Company of Proprietors are obvious, both in respect to the saving of time and capital, as well as to the prospect of an early and handsome remuneration to those who may embark in the undertaking.

The contemplated extension of the branch rail-road (already provided for in the act of parliament) to Chacewater, about one mile and a half from the mines, will ensure a supply of coals, lime, timber, and other requisites, upon very reduced terms.

In order to work these Mines effectually, it is proposed to form a Company, consisting of 5000 shares of £5 each, to be held upon the following conditions:—One pound per share to be paid on the allotment of the shares, and 10s. per share on the 11th July, 1836.

And should any further sum be required, it will be raised by calls of 10s. each, of which one month's notice will be given in two Cornish and two London newspapers.

Application for shares may be made to Messrs. Baxendale, Tatham, Upton, and Johnson, Great Winchester-street.

### REDMOOR CONSOLIDATED MINING COMPANY.

**THE PROPRIETORS OF SHARES** in this Company who have omitted to pay the last call made by the Managers of 10s. per Share, are reminded that all Shares so unpaid upon, have become, and are now subject to forfeiture. And Notice is hereby given that all Shares upon which such call shall remain unpaid on the 31st day of January inst. will then be absolutely forfeited.  
By Order of the Managers, R. THOMAS, Sec.  
1, Cushman Court, Broad Street, Jan. 13, 1836.

### MOUNTS-BAY SILVER, LEAD, COPPER, and TIN MINES.—At a MEETING, held the 12th day of January, 1836, at the Imperial Coffeehouse, Bucklebury.

#### JOHN TUCKER, Esq., in the chair.

Present.—Wm. Law, Esq.; Charles Malton, Esq.; Arthur Woolf, Esq.; the Rev. D. Davies, A.M.; Messrs. Hayward, Joseph Gray, John Williams, Thomas Hill, Caleb Cragg, C. R. Roberts, J. Croft, R. Williams, and A. Bennett.

Mr. Bennett having stated the object of the Meeting.  
It was resolved, That a Provisional Committee, to consist of 8 gentlemen, viz. Wm. Law, Esq., Chas. Malton, Esq., A. Woolf, Esq., the Rev. D. Davies, A.M., Messrs. R. D. Hayward, Joseph Gray, John Williams, Thos. Hill, and Caleb Cragg, should be immediately formed for the purpose of acting on behalf of the Company, until the first general meeting.

Resolved, That Messrs. Rogers, Towgood, and Co., be appointed bankers to the Company.

Resolved, That Mr. Charles Richard Roberts be appointed secretary and treasurer to the Company pro tem.

Resolved, That Mr. Absalom Bennett be appointed manager of the mines.

Resolved, That the Provisional Committee, or any two of them, shall be at liberty to give such directions to the Secretary, Treasurer, and Manager, as may be necessary, in reference to the working of the mines, as well as to the general interest of the Company.

Resolved, That this Meeting do adjourn until this day month, for the purpose of appointing Directors, subject to any alteration which the Provisional Committee, or any two of them, may in the meantime think it necessary to suggest.

#### PROVISIONAL COMMITTEE.

JOHN TUCKER, Chairman.

R. D. Hayward | Thomas Hill  
Joseph Gray | C. Cragg  
Charles Malton | D. Davies  
William Law | A. Woolf, Engineer  
John Williams

N.B. Scrips are ready to be exchanged for bankers' receipts for the amount of the deposits, or on payment of the same at my office, between the hours of 11 and 3, until the 1st day of February next, after which no further applications for shares can be received.

CHAS. R. ROBERTS, Secretary and Treasurer, pro tem,  
7, Gray's-inn-square.

### CORNWALL.—CAUTION TO MINERS AND MINE ADVENTURERS.

**WHEREAS** the Duke of Buckingham and Chandos is the SOLE PROPRIETOR of the MINERALS in and throughout the Manor of St. Perran, commonly called "the CHURCH LANDS," within which are CARN-KIEFS, THE SANDS, GEAR, &c., situate in the Parish of Perranzabuloe, I hereby caution all persons from negotiating with, or accepting any licence or sett from, any other person than myself, or such other as may be duly deputed by the said Duke. And I further caution all persons from interfering with or working any Mine or Mines within any part of the said Manor, without having first obtained legal permission from me, or such other person as aforesaid.

St. Mawes, Jan. 4, 1836.

T. DAVEY JAGO.

### VALUABLE MINE SHARES FOR SALE.

1-9th in Treasuran, situate in Gwennap.  
2-19th in Wheal Croft, Long Ces and Dunsell, in Illogan.  
3-19th in Wheal Jewell, in Gwennap.  
1-6th in Wheal Bassitt, in Illogan.  
1-19th in East Poole, in Illogan.  
Application to be made to Mr. MANN, Stock and Share Broker, 7, Old Broad St.

### CHESTER, WREXHAM, and RUABON RAILWAY COMPANY.

Distance of the Line of Railway less than 20 miles. To be incorporated by Act of Parliament.

Capital £350,000, in 7,000 shares of £50 each. Deposit £2 per share.

#### DIRECTORS.

Sir Felix Agar | Rev. William Moseley, LL.D.  
Albert W. Beetham, Esq., F.R.S. | The Hon. J. W. Mullins, M.P.  
John Campbell, Esq. | Sir William Rawlin, Knight  
Edward Goslin, Esq. | William Wybrow, Esq.  
The Hon. Warburton, Esq.

With power to add to their number, to be resident at Chester and Wrexham.

Bankers—Messrs. Whitmore, Wells, and Whitmore.

Engineer—Sir J. Kennell, F.R.S.

Applications for the remaining shares to be made by letter, post paid, to Francis Beetham, Esq., Solicitor, 8, Chatham-place, Blackfriars, of whom prospectuses may be obtained.

### NATIONAL PNEUMATIC RAILWAY ASSOCIATION.

#### DIRECTORS.

Samuel Boddington, Esq. | Rear-Admiral Wollaston  
Vice-Admiral Sartorius | William Hanning, Esq., F.R.S., Professional Director  
Lieutenant-Colonel M. Shawe |  
William Jones Storch, Esq.

The Directors beg to inform the shareholders that active measures have been in progress ever since the formation of the Association in furtherance of its objects, and especially for the establishment of a line of railway for the practical demonstration of the improved system on a full scale. A favourable site has been selected for the purpose between the Hammersmith road and the Thames, and the requisite drawings, plans, and specifications of the works have been prepared under the inspection of the patentee, so that operations may be commenced as soon as tenders can be obtained, and the necessary preliminaries executed.

The Directors confidently expect that the demonstration may be made in the course of the spring, so as to meet the public interest in matters relating to railways, and draw attention to the important improvements which the system involves as soon as possible.

(Signed) WILLIAM TIDJON, Clerk to the Association.

Office, 22, Cornhill, Jan. 11, 1836.

### GLASGOW, PAISLEY, and GREENOCK RAILWAY.

**AT A PUBLIC MEETING**, held in Greenock, on the 28th ult.:

WILLIAM MACFIE, Esq., of Langhouse, Proprietor of Greenock, in the chair. It was unanimously agreed, on the motion of Sir Michael Shaw Stewart, Bart., M.P.—That the formation of a railway between Glasgow and Greenock, to communicate with Paisley, Johnstone, and Port Glasgow, will be productive of the most important advantages to the agricultural, commercial, and manufacturing interests of the country in general, and cannot fail to afford an ample return to the subscribers.

Measures for forming a Joint Stock Company were immediately taken, the capital stock of which to be, in the first instance, £250,000, divided into 10,000 shares, and such are the evident advantages of this undertaking, arising from the commercial and manufacturing importance of the towns which the line, not exceeding 25 miles, is to connect, in addition to the rich mineral district, and the continued dense and industrious population through which it will pass, that more than one-half of the shares were immediately applied for on the spot.

A Provisional Committee has been appointed, who have directed surveys to be made, and who will publish a detailed prospectus as soon as possible, meanwhile all applications for the remaining shares must be made to James Turner, Town Clerk, Greenock.  
Greenock, Jan. 8.

### CORNWALL.

**TO BE SOLD** by private Contract, the Fee Simple and Inheritance of, and in all that CAPITAL BARTON and FARM, comprising two Tenements called Tregeva and Little Boddick, situate in the several Parishes of Alton and St. Clether, in the county of Cornwall, now and for many years last past in the occupation of Mr. Richard Northey, consisting of a convenient Farm House, with Barns, Stables, and other suitable Outhouses; also a large Area of Arable, Meadow, and Pasture Land, and about 100 Acres of Common and Marsh Grounds, affording a most desirable Pasture for Sheep. The Premises are held on Lease, by Mr. Northey, for a term of 14 years from Michaelmas, 1833, at the clear rack rent of 180l. per annum; have lately undergone a thorough repair, and are well supplied with water, and possess the advantages of good roads, excellent markets, and great facilities of communication with all parts of the Kingdom, being only about one mile from Five Lanes through which the mail goes, and other coaches pass daily, and within convenient distances of Launceston and several other market towns; and in all probability the great Bodmin and Wadebridge Rail Road will be extended to its immediate neighbourhood. This property offers great inducements to gentlemen of capital, as affording an opportunity for safe investment, and more especially to gentlemen disposed to embark in mining speculations, as there are several Lodes of Tin, Copper, Manganese, and other metals intersecting and running through the lands; and a stream work has lately been commenced by a most respectable company of adventurers, from discoveries already made, promises considerable profit to the person who will part with the whole or a moiety of the minerals as may be most agreeable to a purchaser. For a view of the property apply to the tenant, and for further information to Mr. Thomas Rogers, Solicitor, Helston, Cornwall.—Dated 24th Dec. 1835.—N.B. All Letters must be post paid.

JUST PUBLISHED, IN 4to. WITH FOUR PLATES, PRICE 14s.

### THE PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON, for the Year 1835, Part II. containing the following Papers:—

Sir Charles Bell's continuation of the Paper on the Relations between the Nerves of Motion and of Sensation, and the Brain, and more particularly on the Structure of the Medulla oblongata and the Spinal Marrow. 3. Prof. Faraday's Tenth Series of Experimental Researches in Electricity. 3. Mr. Lubbock, Discussions of Tide-Observations made at Liverpool. 4. Mr. John Edward Gray's Remarks on the difficulty of distinguishing certain Genera of Testaceous Mollusca by their Shells, and on the anomalies in regard to Habitation observed in certain Species. 5. Mr. J. O. Westwood, on the supposed existence of Metamorphoses in the Crustacea. 6. Rev. J. Farquharson, on the Ice, formed under peculiar circumstances of Motion and of Sensation, and the Brain, and more particularly on the Theory of Respiration. 7. Mr. J. V. Thompson, discovery of the Metamorphosis in the second type of Crinoides, viz. the Lepidodermis, completing the Natural History of these singular Animals, and confirming their affinity with the Crustacea. 8. Mr. J. V. Thompson, on the Double Metamorphosis in the Decapodous Crustacea, exemplified in Cancer Minnas, Linn. Meteorological Journal, January to June 1835.

Published by the Royal Society; and sold by Richard Taylor, Red Lion-court, Fleet-street; where also may be had—

Abstracts of the Papers Printed in the Philosophical Transactions, 5 vols. 8vo. 15s.; or 2 vols. 4to. 30s.

### WHEAL FAULTOCH CONSOLIDATED MINING COMPANY.

Capital £50,000, in 10,000 Shares, of £5 each.—Deposit £1 per Share.

#### PROVISIONAL COMMITTEE.

Messrs. Vice, Baynard, and Treloar.

With power to add to their number.

#### BANKERS.

LONDON—Sir R. Carr Glyn, Hallifax, Mills, and Co.

TRURO—Messrs. Mayor, Turner, and Mayor.

The Sets belonging to this Company lie east, and adjoining the Consolidated Mines, in Gwennap.

A Prospectus, setting forth the particulars of the Sets, and the regulations by which the Company is to be governed, will be shortly issued.

Applications for Shares to be made to the Committee as above, or to Mr. Treloar, of Chevalier, near Truro.  
Truro, Dec. 24, 1835.

### LANDED and MINING INTERESTS.

**AT A GENERAL MEETING** of Landowners, Miners, and others concerned, held at the Hotel, Truro, December 29, 1835.

It was Resolved, That the humble and grateful thanks of this meeting be presented to his Majesty, the King, for the letter now read, as received by the Earl of Falmouth from the Commissioners for managing the affairs of the Duchy of Cornwall, and for the intimation therein conveyed, that as an act of grace towards those who had appealed to his Majesty in their Memorial, presented by Lord Falmouth, and relating to claims made by certain lessees of the Duchy Mines, his Majesty will be graciously pleased to give His Royal Assent to the passing of an Act through Parliament for placing the Duchy upon the same footing in regard to the limitation of time as that in which the town was placed by the Statute Temporis Act, passed in the reign of King George the Third.

That the foregoing resolution be transmitted by the Chairman to the Commissioners for managing the affairs of the Duchy, in order that the earliest opportunity may be taken for laying it before his Majesty the King, and that an humble Address, in accordance with the same, be presented to his Majesty, by the Earl of Falmouth in person, at his next convenience.

(Signed) FALMOUTH, Chairman.

The Earl of Falmouth having left the Chair, Resolved, That the thanks of this Meeting be offered to the Earl of Falmouth for his able conduct in the Chair, and the zeal and attention which he has evinced in bringing the business now before the Meeting to a successful issue.

### TO CAPITALISTS DESIROUS OF EMBARKING IN THE MANUFACTURE OF IRON.

**THE PROPRIETOR** of a Mineral Estate, abounding in veins of Coal of the best bituminous quality, and in seams and beds of Iron Ore, wishes to engage the attention of a Capitalist who might be induced to establish Iron Works thereon. The favourable situation of this property, with reference to its facility of communication with a flourishing and improving sea Port Town, its inexhaustible resources of Coal and Iron strata, which are level, free, and consequently workable at a trifling expense; the water power which it commands, together with its other local advantages, render it the most eligible site for the erection of Iron Works, which the rapidly increasing manufacturing district in its vicinity can present, and affords the most flattering prospects to a Company, or to a Gentleman possessed of moderate capital, of proving a highly profitable undertaking.

An inspection of Maps, Sections, Engineers' Reports, and other particulars, may be obtained on application on letter, post paid, to the Proprietor, addressed, R. S. Garraway's Coffee-house, Cornhill.

### FAMILY ENDOWMENT SOCIETY, for granting, at or after the time of Marriage, ENDOWMENTS to the CHILDREN who may issue therefrom.

Office (temporary), 33, Great Winchester-street.

CAPITAL, £300,000.

#### TRUSTEES.

Pascoe St. Leger Grenfell, Esq. | Martin Tucker Smith, Esq.  
Henry Porcher, Esq.

#### DIRECTORS.

Henry George Ward, Esq., M.P., Chairman.  
George Alfred Musket, Esq., Deputy Chairman.  
William Butterworth Bayley, Esq. | Edward Lee, Esq.  
John Fuller, Esq. | Major John Luard.  
Pascoe St. Leger Grenfell, Esq. | Thomas Willis Musket, Esq.  
Auditors—Bassett David Colvin, Esq.; Riversdale William Grenfell, Esq.  
William Sherman Crawford, Esq., M.P.  
Bankers—Sir James Esdaile and Co.  
Physician—Dr. Rogee, F.R.S.  
Surgeon—Edward Cook, Esq.  
Solicitors—Messrs. Lacy and Bridges.

This Society undertakes to pay to all the future children of any given marriage (from the eldest to the youngest) 100l. each, or any smaller or larger sum agreed upon, on their severally attaining a specified age (such, for instance, as 14 or 21 years of age), on condition of receiving a present sum of money, or an annual premium, payable during any number of years not exceeding the age of endowment, and dependent upon the life of one or both parents, at their option.

#### Table for 14 Years.

Age of the Husband.	Age of the Wife.	Annual Premium, to be paid by the Husband, or after the 14th Payment.	Sum to be paid to the child on completing the 14th year.
24	18	18 10 10	100
25	21	17 10 10	100
31	25	16 4 3	100
36	30	14 7 0	100
43	35	12 11 6	100
43	40	10 15 0	100

If this premium be paid for 14 years, each child will be entitled to receive 100l. on completing its 14th year. But if the father should die before all the premiums are paid, no further payment will be required in order to secure the Endowment.

The premiums may also be computed to cease in the event of the death of the mother, or of either of the two parents who might die first.

The premiums for endowing future boys only, or future girls only, are rather more than one half of those for all children.

The premiums payable during 22 years for endowing future children at 21 years of age, are somewhat less than two-thirds of those in the above table.

The premiums for endowing existing children are made returnable (if desired) in case they do not attain the age of endowment.

The parties endowing future children will be entitled to four-fifths of the profits, the above premiums being more than sufficient to enable the Society to fulfil its engagements.

JOHN CAZENOVE, Sec.

### CORNWALL GREAT UNITED MINES.—6,000 shares, £12 per share.

The Public are requested to refer to the Prospectus.

The property of this Company comprises Greenhills, Shillstone, Proper, Lishancomb, and contiguous proved and valuable mines near Callington and Liskeard, Blue Hills, embracing the continuation and the underlay of the rich Poldhu and Wheal Kitty lodes in St. Agnes.

The well ascertained lodes in Crowgie, Latis, and other estates in the neighbourhood of Ruby and Gardine Mines, in the parish of Wendron.

Applications for Prospectuses and Shares are to be made to James Trower Bullock, Esq., 6, John-street, Adelphi; or to Mr. T. V. Williams, at the Office of the Company, where plans may be seen, and other particulars obtained.

### BRITISH SILVER-LEAD and COPPER MINING COMPANY.

Capital 120,000l., in 12,000 Shares of 10l. each. Deposit 2l. per Share.

#### DIRECTORS.

W. Miller Thomas, Esq., London.

John Waller, Esq., London.

Edward Suter, Esq., London.

With power to add two Directors for Liverpool and Manchester.  
London Bankers—Sir John Lubbock, Bart. and Co.  
Liverpool Bankers—Northern and Central Bank of England.  
Truro Bankers—Messrs. Williams and Co. (Miner's Bank).  
Solicitor—Edward Tribe, Esq., 65, Great Russell Street, Bloomsbury, London.  
Secretary—Mr. Henry Tribe, 25, Old Broad-street, London.  
Agent for Liverpool, Manchester, and Preston—Mr. Henry Lucas, 23, Canning-place, Liverpool.

Cashier and Purser at the Mines—P. Vyvyan Robinson, Esq., of Naascon, Helston, Cornwall.

These Mines are situated at Torkever, in the immediate vicinity of Porthleven Harbour, in the parish of Smithey, Mount's Bay, Cornwall.

It may be asserted, without hesitation, that these Mines will prove as abundant and profitable for Silver-lead and Copper as any in the West of England, being upwards of 1000 fathoms in length on the course of the lodes, and 475 fathoms in breadth, with twelve shafts ready for working, one of which is 60 fathoms in depth below the adit level.

The lodes which they contain, having been satisfactorily traced, are of the largest size and of the productive character.

The Penrose lode is said by BOULANGER, in his "Natural History of Cornwall," published 1728, page 210, to have been wrought upwards of 300 years, and as late as 1820, when the work was suspended on account of the low price of lead (3d. per ton of 25 cwt.) and the heavy duty, one-twelfth paid to the Lord of the Manor, the vein of lead produced, in many instances, so much as 11 tons of ore per fathom, leaving at the bottom of the shaft a very rich course of lead ore for future working.

The price of lead is now 18s. 6d. per ton of 20 cwt., and the assay of ore from these Mines is from 30 to 50 ounces of Silver in the ton. The Wheal Public and Treowarva Copper lodes, which traverse these Mines greatly enhance their value; the latter lode, Treowarva, is now realising a large profit, at a short distance from the British Silver Lead Mines.

There is a large quantity of the whole ground, above 60 fathoms level, which can be immediately opened with great facility and profit.

The tenure of the chief part is a 21 years lease from November last, paying to the Lord of the Manor, the Rev. Canon Rogers, one twenty-fourth duty, till such time as the outlay for costs be repaid to the Company by the sale of produce, and then one twentieth permanently, free of all parochial and other rates and local taxes; a few inclosures on the estate are held for a similar term from Mr. James, at one-fiftieth net duty.

It is intended to erect forthwith two pumping engines, one of 56 inches, and the other of 48 inches cylinder; also a grinding engine, and a steam whim.

#### REGULATIONS.

The Capital of the Company is to be 120,000l., in 12,000 shares of 10l. each. The first instalment of 2l. per share to be paid to either of the bankers by the time fixed in the letter of appropriation.

No further instalment will be called for without one month's notice, and not to exceed 1l. per share.

Two hundred shares to be the qualification of a director.

The shares will be to be signed by two directors and the secretary. A register will be kept to record to whom the shares are first issued, and for transfers, if required by the holders.

The original reports from the mines, together with the books of the Company, will always be open for the inspection of the shareholders.

That all the contracts for purchases by the Company be for ready money, in order to exempt the shareholders from any liability beyond the amount of their subscriptions paid up.

A General Meeting of the shareholders to be held in London or Liverpool, in the month of April in each year, commencing in 1837, at which a full report of the Company will be submitted, with a statement of the accounts.

That at all meetings of shareholders a proprietor of 5 shares, and less than 10, shall have 1 vote; of 10 shares and less than 20, 2 votes; of 20, and less than 30, 3 votes; of 30, and less than 40, 4 votes; of 40, and less than 50, 5 votes; of 50, and less than 60, 6 votes; of 60, and less than 70, 7 votes; of 70, and less than 80, 8 votes; of 80, and less than 90, 9 votes; of 90, and less than 100, 10 votes; and of 100 shares and upwards, 10 votes.

An assignment of the leases of the mines is made to the directors, as trustees for the Company.

Applications for shares to be made to the Secretary or Agent, Office, 34, Old Broad-street, London, January, 1836.



## RIO DE ANORI GOLD STREAM-WORKS COMPANY.

NOTICE is hereby given, that the call of £2 10s. per Share, made at a General Meeting of the Shareholders, on the 23d of December, last, must be paid to Messrs. Martin, Stone, and Co., Lombard-street, Bankers to the Company, on or before the 1st day of February, next, as all shares will be declared forfeited on which such call shall not have been duly paid, agreeable to the prospectus.

By order of the Directors,  
SAMUEL HARPER, Solicitor to the Company.

2, Cloak-lane, City, 14th Jan. 1836.  
N. B. On the 14th inst. receipt for the amount of the above call, with the original scrip shares, being left with Mr. Harper, he will on and after the 15th of February, deliver registered parchment shares in exchange to the shareholders.

**SOUTHEAST RAILWAY**, in continuation of the Blackwall Railway.—  
Capital £300,000, divided into 6,000 shares of £50 each: deposit of £2 10s. per share.

This line is adopted with the view of continuing the London and Blackwall railway as an inlet into the metropolis through Barking, Dagenham, Rainham, Grays, Hole-Haven, Leigh, to Southend, with branches to Ilford, Purfleet, Romford, Tilbury Fort, Mucking, Rochford, and other trading places on the line of road. The distance by land to Southend is 44 miles, by the railway it will be 34, thereby saving 10 miles.

The objects of this railway are not founded upon speculation, but upon the intercourse that already exists between the trading towns on the line, and for improving the very fertile county of Essex.

Applications for shares and prospectuses, stating fully the objects of the undertaking, to be made to the bankers, Messrs. Ladbroke, Kingscote, and Co., Bank-buildings; to Messrs. Sparrow and Co., Bankers, Chelmsford; James Lambert, Esq., Barking; to the solicitor, Thomas Brown, Esq., 11, Mark-lane, Fenchurch-street London; Messrs. Comport and Knayett, solicitors, Rochford; or to the secretary, at the Railway-office, 11, Mark-lane; which will be submitted to the Directors for their approval and allotment.

Railway office, 11, Mark-lane. G. COLE, Sec.

## VALUABLE SHARES IN SOUTH ROSKEAR COPPER MINE, FOR SALE, NEAR CAMBORNE, CORNWALL.

TO be perpetually sold by Auction, THREE FIFTY-EIGHT PARTS or SHARES, of and in all that very valuable and most productive Copper Mine, called or known by the name of South Roskear, situate in the parish of Camborne, in the county of Cornwall; and of and in all erections, buildings, tools, engines, whims, kibbles, ropes, and other machinery on the said mine. For sale whereof an auction will be held at Andrew's Hotel, in Redruth, in the county of Cornwall, on Friday, the 29th day of January next, at 2 o'clock in the afternoon. For viewing the said mine apply thereon, and any further information respecting the same may be obtained on application to the purser thereof, or to Mr. Christopher Wallis, solicitor, Bodmin; or Mr. James Husband, solicitor, Alliance Life and Fire Assurance Office, Devonport.

Dec. 27, 1835.

## WHEAL GILBERT TIN AND COPPER MINING COMPANY.

Capital £10,000, in 6,000 Shares, of £2 10s. each. Deposit £1. per Share.

John P. Magor, Esq., Chairman.  
Messrs. Magor, Turner, and Magor, Truro.

The sets belonging to this Company are Wheal Gilbert, Nanjenkin, and Trescow, situate in the parishes of St. Erth and Breage, in the County of Cornwall.

Applications for shares may be made to Messrs. John and Henry Hore, 18, Copthall Court, Throgmorton Street, London; to Mr. Grylls, Ticketing Paper Office, Redruth; or to Messrs. W. Trenery and Son, Mining Office, of the same place, for a few days, (if by letter, post paid), of whom prospectuses may be obtained. January 6, 1836.

## WHEELS HARMONY AND MONTAGUE CONSOLIDATED COPPER AND TIN MINING COMPANY.

THE DIRECTORS impressed with a conviction of the great value of these Mines, feel it a duty they owe to the numerous applicants for shares, and the public generally, to submit to them the following extracts from various letters and reports, relative to the past and present state of the Mines, and their future prospects:—

"Wheal Harmony was originally taken up by a party who determined upon working a large hard and uncongenial tin lode or vein, against the opinion of the miners and others in the neighbourhood, who advised him that there were many other veins both of tin or copper in the sett or mine, which though smaller, would produce more ore, and be sure to be profitable in depth, but regardless of repeated cautions, he continued operations on the great lode until he had expended upwards of £2,000. His funds nearly exhausted, without any chance of reimbursement from the great lode, he made cross cuts into some of the smaller lodes as he had before recommended to do; in two years he repaid all his outlay, and the quantity of tin sold monthly largely increased, by which time one of the copper lodes was also brought into profitable production, and the mine was not only giving profit, but that state that there was no kind of doubt of its being one of the most profitable in the county. But he having incurred many thousand pounds' debt, suddenly left the country, and the mine was necessarily suspended. About two years previous to its suspension, in consequence of the richness and productiveness of the copper lodes in this mine, the immediately adjoining sett on the western boundary, Wheal Montague, was undertaken, and a new shaft and steam engine, &c. &c. was erected, and £4,000 of ore was raised the first year, the second year made equal profits, when the largest shareholder and the lords disputed, and the workings were suspended.

"Convinced by the results of Great Tolgus, immediately adjoining, the late proprietor, at his own expense, last year re-dug the engine and mine, and sunk down in the hard ground, which cost him 90l. per fathom. Sinking the shaft for some time, it gradually altered, and now at 87 fathom (I think 87), or thereabouts, the ground is totally changed to a beautiful killas; sinking charge only from 15l. to 17l. per fathom."

"The mines are ready to work immediately, and will be in a regularly productive state, and ore in the market within two months from the day of recommencing operations. It may be observed that although these mines have not been effectively worked for some years, yet Wheal Montague is now actually making a profit of 200l. per month, a profit which is all made above the water, as it must be borne in mind that neither of the engines are working, and that they can touch nothing below the 40 fathom level, as the water is up to that level. The engines on the mines are all but new, they are quite as good as new, even the boilers in Harmony; there is but one boiler in Montague, it will be desirable to have another in case of accident, as also for economy sake. A very little money will put them in a proper and effective working state, as they have been carefully attended to since the suspension of the mines."

"The united sets have run nearly a mile on the course of the lodes. There are seven lodes known, five of copper and two of tin, but only two have been worked, and here is the value of the undertaking, independent of the present mines, as in a very short time ore will be raising from two other lodes, not yet touched, but likely to make as good as the others. There are parties who will take a 20 years' lease, and be at the whole expense of sinking a shaft, &c., and allow a tribute of 10s. in the pound, but this would be folly, as you can soon cross-cut into it and drain by your present machinery, and set it at about 4s. in the pound. There is another lode which some parties want to take for five years, allowing 6s. and 8s. in the pound, but this would not be prudent, as it is a rich lode, will be commanded by the present machinery, and is likely to be very profitable."

"There is another copper lode which will soon be cut, and ore raised. There is a very large tin lode, from which about 5000l. worth of ore has been returned, upon this the late proprietor lost money, but it then was the only lode working. Now there is little doubt but that considerable returns can be made, as the copper lodes pay all the expenses of the mine, therefore the water will now be only its proportion instead of the whole of the current expenditure of the mine."

"There is no doubt but that a comparatively small outlay will put the mines in a permanently and progressively increasing profitable state, say 10,000l. returns at the end of first year, and upwards of 20,000l. the second year; it is even more than probable that upwards of 30,000l. may be made the first year, as by judiciously opening the ground as you sink, and making proper approaches to the north and south lodes, you will not only, after a short time, quadruple your produce, but will be able to clear cent. per cent. on the tribute."

"In short, the facilities for raising ore, the number, size, richness, and continuity of the veins, and the other great advantages of these mines, guarantee the certainty of unusually large profits, and fully warrant the declaration that there is every prospect of their ranking amongst the most productive in the kingdom; that there is an absolute certainty of considerable quantities of ore being raised, immediately after the drainage of the ground, that an early dividend may be declared, and that the proceeds of the mine will rapidly and largely augment in proportion to the increased number of veins and levels brought into operation."

Redruth, Dec. 8, 1835.—We, the undersigned, being the late Captains in Harmony and Montague Mines, have this day inspected them, as far as we could go down for the water, and do report as follows:—

"In consequence of the engines being stopped before we were appointed to these mines, we cannot speak of the levels below the 41 fathom at Harmony, and 34 at Montague, but can only state from reports of the miners who formerly worked in them, they say—the lodes are large and promising, we find at 41 at Harmony there are several parallel or side lodes to the south, that have had little or no trial, from the appearance of them at this level, we have no doubt, if worked on effectually, they will prove as productive, and make the mines as profitable as they were in the last working; we cannot calculate on having much ore done on the old lode until the engine shafts are sunk deeper; we find at Great Tolgus Mine which is on the same lodes, and adjoins sets to the west, that by sinking from the 100 fathom level to the 130, the lodes proved to be much larger, richer, and more profitable than they were at the levels above, therefore, as Harmony is only down to the 40, and Montague to the 37, there is every reason to believe, if these mines are sunk as deep as Great Tolgus is, that they will prove equally productive and profitable as that mine.

(Signed) PETER WILLOUGHBY,  
THOMAS CARTER."

There is now about two years and a half unexpired of the original grant, which has been contracted for by the Directors of the present Company, together with all the machinery, pit work, pumps, whims, &c., and a new grant for twenty-one years has been obtained from the lords of Trevelick, commencing from the termination of the existing lease; which documents may be inspected at the office of the Company; also Grylls' authentic list of the copper ore sold from these mines, which the Directors presume will be sufficient proof of the past, and the fact, that the proprietors of the Great Tolgus Mine (which is immediately adjoining Wheal Montague to the west), are now sinking a shaft to take the lode at 90 fathoms deep, in evidence enough of what may be expected in Wheal Montague, which is so yet only 34 fathoms deep, and has raised very much more ore than Tolgus did at that depth, the lodes or veins being the same.

From the above statements and the concurring testimonies of numerous other parties, as to the great value of these mines, and the advantage that it is expected will result from efficient working, the Directors feel justified in recommending them to the favourable attention of the public.

## MEDITERRANEAN AND LEVANT STEAM PACKET COMPANY.

At a General Meeting of the Directors of the said Company, held on the 25th instant, it was resolved, That notice should be given to the Shareholders to apply at the office of the Company, between the 15th and 20th of January next, and they are hereby requested to leave the number of shares they claim upon, and to apply three days afterwards for the amount to be refunded, particulars of which may be obtained at the office.

EDWARD SMALLWOOD, Sec.  
7, Angel-court, Throgmorton-street, Dec. 31, 1835.

**TO FOUNDERS AND ENGINEERS.**—The Directors of the SOUTH POLGOOTH TIN and COPPER MINING COMPANY are ready to receive TENDERS for a STEAM ENGINE of Thirty-six Inch Cylinder, to be delivered on the Mine, near St. AUSTLE, in the county of Cornwall, and to be erected by the Company's Engineer. Specification and other particulars may be had at the Office of the Company, and tenders will be received till the 21st day of January.

20, Basinghall-street. R. N. PADDON, Sec.

Will be ready for Sale early in January,  
Dedicated to the Chemical Professors of the United Kingdom,  
In a handsome Mahogany Chest, 6l. 6s.

**A NEW CHEMICAL CABINET, or Amateur's Laboratory** (by R. B. Ede, Her Majesty's Appointed Chemist), comprising an organized collection of 130 Chemical Tests, Re-Agents, and best contrived modern Apparatus, calculated for the Student, the Proficient, the Druggist, the Dyer, the Dry-salter, the Physician, the Manufacturer, the Mineralogist, and the Amateur, and adapted for the performance of refined Experiments of demonstration and research in any Drawing Room, with ease, safety, and success.—Also

R. B. EDE'S MINERALOGICAL BOX, or Pocket Blowpipe Apparatus, on a new principle, containing above 30 essential requisites for assaying Minerals, and assisting Geological inquiries; in a neat japanned case only 7s. by 3s. inches, Price 21s. being the cheapest and most complete Portable Pocket Laboratory ever offered for Sale.—May be seen at many, and procured of all the Agents for his well known and approved

CHEMICAL PORTABLE LABORATORY,  
containing above 90 Tests, Re-Agents, Blowpipes, and Appropriate Apparatus, Price 17. 11s. 6d., or with stoppered bottles, French Polished Cabinet, Lock and Key, Two Guineas.

Butler, 4, Cheapside, and Williams and Haydon, Aldermanbury.

Just published, price 2s. 6d.

**THE WALL-END MINER.** By James Everett, Author of the Village Blacksmith.

"William Crister's Narrative, in the hands of Mr. Everett, is both interesting and instructive; and we are much mistaken if this small volume does not obtain a more extensive circulation, and make a deeper impression, than the author has anticipated to anticipate. It is well written, and we sincerely recommend it.—*Newcastle Courant.*"

TO be SOLD by Mr. GRYLLS, Redruth, the following SHARES in Mines, (all letters to be post-paid.)

One 192d in Tresavean.  
One 64th in Wheal Tolgus.  
One 94th in East Wheal Crofty.  
One 128th in East Wheal Crofty.  
Two 60ths in Wheal Ellen.  
Two 128ths in Bosuallen.  
One 64th in Trewavas.  
Two 128ths in East Wheal Rose.

## TOWEDTEAGUE MINING COMPANY.

To the Editor of the Mining Journal.

Sir,—Until this moment my engagements have prevented my stating, that the publicity given to this affair has very much annoyed me; not as regards my conduct in the matter, but from a reluctance to be thrust upon public attention, and an apprehension that strangers may suppose that I either arranged, or was informed, of the course my friends (perhaps with less judgment than kindness) intended to adopt, to obtain a return of the small sum at the banker's. I had nothing whatever to do with their arrangements, directly or indirectly, nor had I any intimation or knowledge of the meeting until the following Sunday's post. It would be a tedious encroachment on your Journal to enter into any detail of circumstances, and the unworthy means pursued to defeat the establishment of the company. The conduct of the directors will have no further notice from me, than the declaration, that I need not depend upon myself nor friendly shareholders, but on county and other evidence to prove the incorrectness of Capt. Willey's statements, inserted in your journal. I leave the directors to their own reflections as they have already been troublesome and expensive enough. As there can be no question of the eligibility of the mines, they will very shortly be resumed. It is with much reluctance I thus obtrude myself on your patience, but convinced that your spirit of equity and impartiality will induce the immediate insertion of this note, I beg to subscribe myself, your very obedient servant,

G. ABBOTT.

## ECONOMY OF STEAM POWER.

To the Editor of the Mining Journal.

Sir,—Permit me to inform "A Friend to Scientific Enquiry" whose letter you have extracted from the *Glasgow Liberator*, that there is not an engine at work in Cornwall, in which the expansive action of the steam is obtained in two cylinders, on Mr. Hornblower's (often incorrectly called Mr. Woolf's) plan, nor has there been one for some years.

The discoveries in the expansive powers of steam, to which Mr. Wolf long since pretended, were evidently "made at the writing desk;" for the slightest acquaintance with pneumatics is sufficient for one's understanding that if steam be permitted to expand into 5, 10, 20 or 40 times its original volume (ceteris paribus), its pressure will be reduced respectively to  $\frac{1}{5}$ ,  $\frac{1}{10}$ ,  $\frac{1}{20}$ , or  $\frac{1}{40}$  of that which it at first exerted on the same area.

It is incorrect in saying that Mr. Wolf introduced the use of steam of high pressure into this county; for we owe it to Captain Trevithick. Neither is he accurate in remarking that the greater the expansive action, the smaller the actual power; as this of course depends on the initial force of the steam, and the volume into which it is allowed to expand.

I remain, Sir, your very faithful servant,

W. J. HENWOOD.  
1, Morrab-place, Penzance, Jan. 2, 1836.

## A REAL SAFETY LAMP.

To the Editor of the Mining Journal.

Sir,—In my former letter, which you favoured with insertion, I attempted, and I believe not unsuccessfully, to shew that the assertions of the late Committee on "accidents in mines," that Sir H. Davy was not the first discoverer of the principle of the safety lamp which bears his name, and that he was well aware of its insecurity, were not warranted by the published evidence. I shall now, with your permission, make some remarks on another and very important part of their report, which requires explanation. This it will probably receive, if brought before their notice by your much read Journal. The report states, in plain terms, the objects of their investigation—"ventilation," "safety lamps," and "maps or plans"—and expresses disappointment at the result not having furnished them, as they had hoped, with the means of recommending to the miner a better protection than he had hitherto possessed. It is true, on ventilation nothing further was elicited than that it ought never to be solely depended on for preventing explosions, as it is at best ever liable, even when on the largest and most perfect scale, to be interrupted by the most trifling circumstances. Maps or plans appear to be matters of no difficulty, only requiring common attention. On the safety lamp, however, the principal object of the inquiry, there has been made, if the Committee have not said more than they ought, a most important and valuable discovery; for the ignition, and consequent explosion of inflammable air, must be considered, beyond all comparison, the greatest evil attending mining pursuits, and one which has till now resisted all human means. If therefore the Committee have discovered means of preventing this evil, it must be concluded that their labours have been eminently successful, and the result cannot be too generally known, nor too speedily acted on in all the coal and iron districts. On this point the Committee appear to have acted with the most praiseworthy circumspection, the putting to actual and severe trial the safety of all the lamps placed before them during this investigation, thereby taking an unerring test of the value of the previous evidence. There were, it appears, nine lamps, including Sir H. Davy's, tried on this occasion, only one of which was found to sustain the requisite proof. Of this lamp the Committee speak in the following unqualified terms of approbation:—"They are therefore decidedly convinced that its construction possesses paramount merit." The improvements are probably those which

longer life and additional facts would have induced him (Sir H. Davy) to contemplate as desirable, and of which, had he not been the inventor, he might have been the patron.

That a statement of this nature, on a subject of the first importance to one of the most valuable interests of the community, founded on the evidence of some of the highest chemical and medical authorities of the present time, and put forth in a report of a parliamentary committee, will be read, as it ought, but in one way, admits of no doubt. Have not the Committee then either said too much on this point, or as yet done too little, in not founding a recommendation upon it? There is a mystery hanging over the report here that ought to be removed. As one whose interests are mainly depending on the safety and success of mining pursuits, I beg to thank you for the zeal and ability you have already shown in the miner's cause.

I remain, Sir, your obedient servant and constant reader,

Jan. 13, 1836. FAIR PLAY.  
P.S. The non-appearance of Messrs. Faraday, Ure, and Brande before the Committee was probably not their own fault, but their utter silence on this subject, while the press is open to them, and public attention fixed on them, is unaccountable and most unsatisfactory.

## ROBERTS'S SAFETY HOOD OR MOUTH PIECE.

This very useful apparatus has been submitted to the examination of scientific bodies, and received from them distinguished marks of approbation; and the inventor has very justly been rewarded with royal marks of distinction and munificence. We think the discovery entitled to more extended notice, and therefore extract that portion of the evidence given before the Parliamentary Commissioners, to report upon "Accidents in Mines," as relating to the origin, construction, and improvement of the machines.

## ORIGIN.

Did you meet with accidents from carbonic acid gas while you were in the shaft at Newbottle Colliery? On one occasion I had nearly met with an accident. There were two very large furnaces to draw the foul air out, and to cause a quick current of air to circulate through the works. At this time the fireman, who took care of the furnaces, had thrown a fresh supply of fuel on them; on descending the shaft, from this circumstance I was nearly suffocated. It struck me at the moment to wrap my jacket round my face; it happened to be very moist, and when I got to the bottom of the shaft I found it was very comfortable, and a sudden change had taken place in the apparent state of the air. Some time after I was thinking over the matter, and it occurred to me that the cause was the woollen and the perspiration with which it was saturated that preserved me in this instance. From trying further experiments in the same shaft, I found it was the woollen which I had moistened with my bottle of water. I turned this matter over in my mind, and was led to make an apparatus to prevent accidents from suffocation, and thus enable the men to work, and to have the use of their hands and eyes in an impure atmosphere.

Was any instrument for the purpose of furnishing respirable air the result of your consideration?—Yes.

Now will you explain what that instrument is?—It is called a safety-hood, or Roberts's mouth piece. Lord Lindsey, now the Earl of Balcarrais, gave it that name.

His Lordship applied that name to it?—Yes.

## CONSTRUCTION.

Will you explain as concisely as possible the nature, the form, and construction of that hood? The hood closes over the head, with two glass goggles for the sight.

Of what is it made?—Of wash leather, and stuffed with wool and horse-hair, so as to make it pliable round the neck, and prevent any foul air drawing underneath. From the mouth there is an elastic pipe which comes a little way down, at the end of which pipe there is a vessel containing lime water (the cream of lime), or chloride of lime, according to the kind of vapour it might have to meet, or be expected to meet. These solutions are applied in various chemical works, the chloride of lime, cream of lime, soap-lees, even clear water is good. This will take up choke-damp, and many kinds of foul air rapidly, and neutralize them so as to enable a person to remain half a day where another could not otherwise remain two minutes.

Now what is the size of the vessel holding any of those liquid preparations to which you have alluded?—It will hold about 3 quarts; there is some sponge which is filled with it, so that the air shall pass through fine apertures.

Is it one solid sponge, or pieces of sponge?—It is immaterial whether the sponge is in one piece or several.

Then the funnel or box in which the sponge is contained, is perforated with holes?—Yes, there are small tubes for the air to go down, and by continually passing it through this solution, the foul parts adhere to the sponge and to the lime.

Then does the box with the preparation hang from the end of the tube, does it drag along the floor, or is it carried by the man using it?—It is carried with a belt over the shoulder; it hangs down over the side, so that there is no pressure from the neck, like a soldier's belt.

Now is respiration kept up by the men using it with tolerable facility?—Yes; when first invented it was rather difficult. Persons using it could not remain with it more than half an hour at the longest.

And have you improved upon its construction since that time?—Yes; I have improved it so that a person can work day by day without any inconvenience; it is also on a lighter scale now.

Now have you tried it yourself in carbonic acid gas? I have tried it myself; where no other person could exist one minute without it I have remained 39 minutes.

You apprehend that you have tried it in places where the carbonic acid gas was in such quantities, and so powerful as would immediately extinguish life?—Yes.

## IMPROVEMENT.

And you found no difficulty in the experiment?—Some little difficulty then; but since I have made a very great improvement in its construction, and should now feel none. The improvement is this, the air which has been respired is not suffered to go back to the small vessel where the good air is separated from the bad; it is thrown out by means of a valve at the front of the mouth, or rather there are two valves, one is to admit a supply of purified air, and the other to pass off the air which has been respired.

Now have you ever had this instrument tried in foul wells?—I have not been in foul wells.

Have you ever tried it in cases of fires?—I have tried it in cases of fires, also in the mines.

Has it ever been tried in the case of any fire in this city?—It has been tried by some of the firemen; it has also been tried at the large refining works belonging to Mr. Brown, in Wood-street. His men have had three supplies from me, to prevent their inhaling the nitrous acid which arises from driving off the copper from the gold. It is very pernicious when the atmosphere is heavy, or when the furnace does not draw well. In such cases the place is filled with this deleterious vapour, which causes a sensation of coughing, and places the people very often under the doctor's hands, and in the end kills them.

And have Mr. Brown's workmen used this instrument?—Yes. Did they find any advantage from it?—They found such great advantage, that when I was down at Bolton, in Lancashire, as the hoods were worn out, they applied to my friend, Mr. Upton, for others, he being in London, which I was not. It was necessary to pay them higher wages to work in this place till they got the hoods, as they were frequently very ill from the fumes proceeding from the metal.

Do you mean to say the workmen had constantly made use of your invention?—Yes, and they were wanting it to be renewed. Since then a plan has been brought forward of a platina vessel dissolving gold, over which there is placed a funnel to carry off the fumes. This has enabled Mr. Brown's workmen to do without the hoods, but they are, however, still used in various chemical works in different parts of England.

Then they are now constantly in use on the improved plan?—I have not sent out any on the improved plan as yet.

But you have no doubt it will be found a great improvement whenever it comes to be used?—A very great improvement.

Now, would you hesitate to descend any mine charged with carbonic acid gas after an explosion, provided with this apparatus, to draw out the bodies of the sufferers?—No, I would not.

That is, you have full confidence that you would be able to prosecute your search for any person who has suffered, without risk to yourself?—Yes; I am so confident of it, that if they were in a torpid state I could fetch them out of it were a mine distant.



*(continued)*

of the water-wheel species, one on rock, the other in the community.

and places of the chief Mines and Mineral works in *England*,

Captain Joe had scarcely time to discover that he had got into the wrong box before his candle was extinguished, and he began to roar lustily for a light. Scarcely had he made this demand when crash went the shower-bath about his head and ears. "Holloa! holloa!" cried he, "I'm used to wet shafts home to Cornwall, but how the deuce did I get into one here!" Crash went the shower-bath again, and Captain Joe, after a splash and splutter, bawled out "ring, stop the engine, I say!" said he, "ring, stop the engine." By this time the Bull and Mouth people were on the landing place, and sober John demanded of his comrade where he was, and what ailed him? And Captain Joe begged him most piteously "to ring, stop the engine, or call to the summoner to do so." "Ring yourself," said Sober John. Just then Captain Joe, in groping about, had laid hold of the string of the shower-bath, and taking it for the bell line, began to ring at *slow time*, pulling some six or eight gallons of cold water over his person at every stroke, so that there was no longer occasion for the secret agency of Boots or Betty. After ringing in this way some eight or nine times, the reservoir which supplied the bath with water became exhausted, he ceased to ring, and on opening the door, there was the hog-merchant dripping and puffing, and spluttering like any porpoise. On getting him into the landing-place Captain Joe said, that he "thought at first that the clock was gone, but he believed that it only got a chip, and that the lift had again caught her water," which fortunate circumstance he owed his life, for he was never so near being drowned before. Betty had by this time commenced changing him, pitying him all the while, and by the time she had got him to "And," Boniface had made him a good stiff glass or two of toddy, and all was well again. Had this adventure happened to any other lodger to Captain Joe, it was viewed in its true character, and was the source of much merriment at the Bull and Mouth. Captain Joe himself was apt to laugh at his adventure in the *wet shaft*, and has many times been heard to say, that "if he could always keep as *wet in the side* as he was outside during that adventure, he would never trouble his head about selling bala." Some time after he had to spend the evening with a friend or two at some little distance from his lodgings, and remaining out late, on the Bull and Mouth people retiring, Boots and Betty volunteered to sit up to receive him, predetermining to serve him another trick. It was a dreadfully cold night, and while Captain Joe was on his way home, it commenced snowing most tremendously, and in his haste to reach the Bull and Mouth, he was again out in his dialling, he overshot his mark, and was sadly puzzled to find his quarters. In those days the part of the metropolis was neither lighted nor watched, as now; the inhabitants usually retired at an early hour, and slept almost unmolested until Aurora again ushered in the day, consequently there was no one to show him the way home. He had rung and knocked at several doors, and kept roaring out "missed my way," but on such a night people were apt to get out of warm beds to peer about the streets, and to answer the questions of a bewildered traveller. After traversing St. Martin's-le-Grand all its length and breadth some dozen times, Captain Joe began to suspect that he was "Piskeyed," and being awake to all the Cornish superstitions respecting the laughing imp, he turned several of his pockets inside out in order to break the spell, this, however, was ineffectual, he was quite as much bewildered as before, and to try the efficacy of a more powerful charm he stripped in the snow and turned his inexpressibles. This broke the spell, and the hobgoblin finding that he could no longer lead the hog-merchant by the nose, like St. Dunstan led the devil, ran off, to use Captain Joe's own words, "like the tail piped cur, and laughing like a piskey." Having recovered his reckoning, he steered direct for the Bull and Mouth, but his troubles were far from being over. He roared for admission in the voice of thunder, but the storm roared too, and so steeped were the senses of the people of the Bull and Mouth in forgetfulness, that not a soul stirred. There was no ringing, for Boots and Betty had silenced the bell, and closed their eyes before the kitchen fire, and as there was no one deafener than those who won't hear, he had to buffet the pitiless storm for at least another hour at the door of the Bull and Mouth. At length he got quite mad, and, like the old man in the fable, finding words useless he proceeded to blow, and carried on his action of assault and battery against the door of the domicile till the Bull and Mouth shook to its very basis. Boots and Betty now thought it convenient to throw off their slumbers, and both of them, in a half sleepy and frightened tone, demanded who was at the door, and what was wanted? Captain Joe demanded admission, and swore that "the moment he crossed the threshold he would crush the ugly carcass of Boots into a mummy." Boots, to what a storm he had been helping to brew, and knowing that the hog-merchant would be as good as his word, like the prudent governor of a besieged city, instead of throwing open the city gates to an enraged and powerful enemy, he left him to effect an entrance as he best might, and retired into the citadel. Here was further delay. A piskey was held with Betty, but in the same angry tone; and Betty, wisely considering that the better part of valour is discretion, followed *commander* Boots into the citadel, and it was not until Boniface himself came down stairs that Captain Joe got admission. The ludicrous figure of the hog-merchant would have turned the gravity of any judge *topsy-turvy*; mine host observing it, involuntarily burst into a fit of laughter, and retreated to his full speed. It was well for him that Captain Joe was too much benumbed to overtake him; indeed it is only attributable to this circumstance, and to the sort of natural instinct which drew Captain Joe to the kitchen, that Boniface escaped *persecuting* the mummy as a substitute for his mischievous domestic. Captain Joe continued to vow vengeance against the whole establishment, and various means were ineffectually employed to pacify him. Boots and Betty acting on the proverb, "peace



catch a mouse," were neither to be seen nor heard; and a variety of conjectures were afloat, as to where they had taken up their quarters. The hog-merchant was getting more and more obstreperous, and no one dared venture farther than their bed room doors, until Sober John screwed up his courage and advanced by inches, saying a great many soft and soothing things, in the true spirit of a messenger of peace. But on catching the first glimpse of his comrade, he caught the infection, and immediately commenced laughing as heartily as either Boniface or the Piskey; and although he beat an equally quick retreat, he narrowly escaped being run through with a spit by his infuriated comrade. Having made a safe retreat, Sober John, like a prudent general, called a council of war, in which it was agreed that an aide-de-camp, in the person of the cook, should be sent forth to endeavour to bring the enemy to terms, under the protection of a flag of truce. Mrs. Drippingfat, having put on her most demure look, cautiously advanced to within a humble distance of the enraged hog-merchant, and with a bland smile, and in a soothing tone, asked him what he would like to take for supper? This did the business. Captain Joe followed her like a lamb into the pantry, overhauled its contents—made his choice—and in a trice the supper table was laid out before the kitchen fire.

(To be continued.)

#### NOTICE TO CORRESPONDENTS.

*Redruth.*—The letter of *Persius* arrived too late for insertion. *Albion Mines.*—Mr. Cardozo is in error. We listen not to anonymous scribblers. *Sets of the Mining Journal.*—We renew our request to Agents or parties possessing Nos. 1, and 2, to furnish us with them at the earliest opportunity. *Map of Cornwall.*—We are forwarding this matter with all reasonable expedition.

## THE MINING JOURNAL AND COMMERCIAL GAZETTE.

LONDON, January 16, 1896.

The observations which we felt ourselves called on to make in our last two numbers on the subject of the formation of companies and directorships, have very naturally been somewhat unpalatable to those to whom our remarks were more particularly directed; while others have considered them as too generally condemnatory, and thus including several companies to which they could not be said to apply:—that we may at least convince our readers we were perfectly justified in the course we pursued, perhaps a word or two in illustration of the correction of our position may suffice.

The object we had alone in view, was that of attracting the attention of those who are about embarking their capital in mining operations, to the class of merchant directors resident in Cornwall, who are too well informed not to admit the justice and force of our observations as relates to supplies; for we need only refer to scenes of almost daily occurrence in the county of Cornwall, of disputes amongst themselves as to the charges made for materials and supplies to the mine, although they go upon the system of "Give and take," to be fully borne out in cautioning the public, ere they become the dupes of those, who are certain of doing well, whatever may be the success of the adventurers.

It is without regard to any particular mine or board of directors that we speak thus plainly; for it is only necessary for the public to ask themselves one or two questions with the prospectus before them, to form their opinion as to the objects of the promoters of the undertaking. First, let them enquire who are the parties, if Messrs. A. B. and C., as self-appointed directors, are they men of known character and respectability, are they directors in other concerns of a like nature, if so, how many, and are they making directorships a trade—or are they interested in selling the mine which they profess to manage; or perhaps it may be found on enquiry they are merchants, as in the cases referred to, who supply the mines with materials of inferior quality, at an excessive cost, having the auditing of their own accounts, while the shareholders have only to supply the necessary funds.

So lost to every sense of propriety or delicacy, are some of those parties that we find directions formed of Cornish merchants without a London adventurer, although it is to London they look for the capital, while we have every reason to believe that the concerns they are desirous of foisting on the public, have been already tried unsatisfactorily. Unsatisfactory we will admit to those who have lost their money, but satisfactory at least to those, conversant with mining, so far as to enable them to arrive at the conclusion, that the mine is worthy another trial, and that it is to sell her.

We last week adverted to a Company, in which we stated, that the qualification of the Directors formed about one-third of the capital considered necessary for effectually working the mines, and therefore expressed our surprise that it should have been found necessary to form a Public Company to raise the other two-thirds, or about £3,000. As we are informed that we were rather hasty in drawing the deductions we did, we are most anxious to set ourselves right with the public, and place the subject before them in its proper light.

It appears, then, that the 350 shares taken by the Directors as their qualification, is not a part of the 1000, which the proprietors "had agreed to part with," reserving as they did the remaining 1000 with "£5 per share paid thereon," as the consideration or purchase money of the mines; but it turns out that these 350 shares form a portion of the 1000 reserved shares, so that unwittingly the secret is out, the directors are the sellers of the mine in question, they take their 350 shares with £5 paid, so that no capital is required from them while they coolly pocket £5000 as purchase money. It is such acts, as we have before observed, that bring mining into discredit, and we cannot too frequently caution the public in joining schemes of this nature, nor impress on them too strongly the necessity and importance of enquiring for themselves into the objects of the concoctors of the company.

One word more as to merchants and their mines, and the system pursued by mine brokers or share-jobbers; a class of whom we shall hereafter have occasion to speak. One of the Prospectuses which has come before us is to work a certain mine in the county of Cornwall; some shares in which a friend of ours purchased at some £30 or £40 per share in London while they were to be had at £7 or £8 in the county; but then he had the advantage of the aid and local intelligence of a Cornish mine agent: this same mine was tried we suppose, we must say only partially, and was considered, we have some reason to believe as worthy of being knocked; but, say the merchant-directors, give it one more trial, if it will not work with advantage to a private company in 64 shares it may to a public one; and as we multiply the number of shares, so are the prospects of success, in like manner increased; while of

one thing we are certain, if we form the direction; if we supply the materials, we cannot lose much, and we can see that no one imposes on us however we may impose on others. But we have said enough, one word however at parting—read and judge for yourselves—ask who are the sellers? what the purchase-money? who the directors? and look at your money twice before you part with it once.—It may go into safe keeping—that is, to be kept.

#### THE FUNDS.

CITY.—FRIDAY.

The occurrence of two settling days this week, viz.: in Consols and foreign securities, has not produced much movement of any kind in the funds. The opening or account day in Consols took place on the 14th, and exhibited, on the whole, a surplus quantity of stock. This symptom, however, is scarcely worthy of notice, the continuation or interest for loans on the security of Consols from the January to the February account not having exceeded 3 1/2, or about 2 per cent. interest for money. It turns out, in fact, as might be expected, that the late rise of price from 91 1/2 to 92 1/2, 93 has, as usual, produced the double effect of inducing one portion of the public to realise, while the others have declined any purchases at an advance.

Consols, which commenced on Saturday 91 1/2 ex div., close this evening 90 7/8. Exchequer Bills and India Bonds remain nearly as last week; the former 18. 20.; and India Bonds, 4. 6.

The Foreign Bond Account of the 15th was settled to-day, and having been preceded, as on several recent occasions, by the sales of parties who appear to be desirous of realising the profit resulting from the late advance in Spanish Bonds, the prices of this security declined yesterday to about 49 1/2. The pressure abated, however, at the close of the day, and at the actual settlement of the account this morning, the Bonds again advanced and close this evening at 50 1/2.

Upon the whole, the prices of Spanish Bonds have been heavy for some days past, the public here and at Paris not appearing to coincide in opinion with M. Mendizabel that the affected and prolonged mystery in the plan of finance must by any necessity portend a favourable result. On the contrary, it is generally believed that a considerable deficiency must exist, owing to the extraordinary war expenditure, and the public here and on the Continent are therefore looking with much anxiety for the solution of the question by what means the deficit to be supplied. The continued delays of the Spanish Government in the measures which were expected to be speedily adopted for the sale of convent lands have also operated unfavourably, and the belief of the bondholders that the Spanish Government is disposed still to proceed in an honest and straightforward course, appear to be chiefly sustained by the circumstance that the Ministry do not appear as yet to have lost the support of the patriotic party in the Chamber.

The other reports this week as to Spanish affairs appear to be of a favourable character. It is stated that the Commercial Treaty which has been lately discussed between the Spanish Government and ours is suspended for the present at the request of the former, on the plea that it will be more consistent with the honour of both parties that the Treaty should be finally settled when the period arrives at which Spain, being released from the insurrection in Biscay, may be supposed to treat upon equal terms.

With regard to the reported guarantee by England of a loan of two millions for Spain, it is believed that our Government, which has advanced military stores to a large amount, may as freely and consistently propose to Parliament a guarantee for any aid required in money. Whatever be the destiny of Spain, whether the great economic revolution now in progress is to be effected by peaceable means under the constitution of the Chambers, or by an armed struggle against the monks and their party, it is strongly felt here, that it is the interest of England to assist in the revival of energy, self esteem, and national government in Spain, and consequently to rescue her from Foreign influence, and restore her to national strength and independence. If from 1822 to 1825 it suited the policy of this country to favour loans of money to the Spanish American Colonies, (amounting to a nominal capital of 27 Millions), in order to rescue them from the Bigoted Monastic Government of the Mother Country, it is strongly argued now that it is also the duty and interest of this Government and people to assist the Spanish nation in throwing off the yoke of the Monks, with all its depressing influences upon industry, intelligence, and national improvement.

With regard to intelligence from other parts of the Continent, the week has been singularly barren. By accounts received from Paris this morning, it appears that French 4 per Cents. rose on Wednesday to 102 1/2. Notwithstanding this encouraging circumstance, it is believed that the French Ministry, which is in reality anxious to reduce the 5 per Cent. debt to 4 per Cents., will not, in fact, do any more this session than to revive the discussions upon this subject in the Chamber, with a view of attempting the general reduction in 1837.

Private letters recently received from the Continent, written by persons generally well-informed, state that the relations between Russia and England are such, that in the opinion of many, war is scarcely to be avoided. It is affirmed that in answer to applications from England, the Austrian Cabinet has declared that in the event of any war (maritime only) between England and Russia, Austria will be an armed neutral. It is also understood that France is disposed to be altogether neutral. Although these circumstances are by no means favourable to this Country, it appears to be expected here that Russia, being conscious of her present weakness, will agree to any terms which this Country may propose with regard to the Dardanelles as necessary to our security in the East.

In the meantime, it is evident that although the actual circumstances of this Country are flourishing, yet that the two great political parties, which in turn appear to administer the Government, are much more divided, and factiously opposed to each other, than on previous occasions; that the current of public opinion runs strongly in favour of the continuance of peace, even although some decisive effort to curb Russia were a matter of evident policy, and it would follow, under such circumstances, that as there is but little probability of an union of parties, even upon a national question, that there is therefore but little chance that peace will be disturbed.

In all the markets for Foreign Securities, except in Spanish Bonds, transactions have been upon an extremely moderate scale, and the prices nearly without variation.

The market for Railway Shares has, however, exhibited a striking contrast to the others. The advance which occurred last week has been followed by a further rise since Saturday in the prices of many of the Shares, more particularly in those of the London and Birmingham, Southampton, Gravesend, Croydon, and Stephenson's Brighton, for all which there has been a considerable demand during the greater part of the week. Brighton Shares have been in a very excited state this morning, on account of a negotiation for a junction, which has for some time been pending between Gibb's and Stephenson's Brighton lines. The rumours on this subject have been confirmed by an advertisement this evening, by which it appears that the Directors of Gibb's Brighton will suspend the execution of their line by Merstham this session, and that a junction will take place between their line and Stephenson's at or near Epsom.

The rise in the prices of Railway Shares this week is considered to be the more remarkable, as the prices of iron, which affects these undertakings sensibly, in the cost of Railway bars, &c., have again advanced considerably.

Prices of the leading Railway Shares close this Evening as follows, viz.:

London and Birmingham	£60	62 premium.
Blackwall	2 1/2	2 1/2 premium.
Brighton (Gibb's)	par.	
Ditto (Stephenson's)	7	8 premium
Croydon	13	14 premium.
Grand Western	13	14 premium.
Greenwich	8 1/2	9 premium.
Gravesend	1	1 premium.
Southampton	2	1 discount.

#### LATEST INTELLIGENCE.

CITY, 12 o'CLOCK.—Consols for account, 91 1/2, 3 per Cent. Red. 91 1/2, 101 1/2; Portuguese 5 per Cents., 84 1/2; Spanish 5 per Cents., 50 1/2; Deferred, 24 1/2; Passive, 16 1/2; Mexican, 37 1/2, 81; London and Birmingham, 62, 4 pm.; Greenwich, 8, 9 pm.; Great Western, 13, 14 pm.; North Midland, 4 1/2, 5 pm.; United Mexican, 3 1/2, 4 1/2; London and Westminster Bank, 4 1/2, 1 pm.

#### UNION GOLD MINES.

Intelligence up to the 12th ult. has been received from these mines, whereby it appears that the No. 3 vein has been cut through in the 60 feet cross-cut from Reading's shaft. The vein is large, about 4 feet wide, composed of several branches of quartz, intermixed with talcose slate, disseminated throughout with the brown oxide and sulphure of iron, with cubical pyrites, and has a favourable appearance for gold—the vein stone when broken shows gold very clearly. The engineer is getting on very expeditiously with the erection of the engine and crushing mill. The second boiler is finished and fixed in its place. Reports of the healthy situation of these mines are highly favourable. They are now raising ores, and hope to begin crushing and producing gold in a short time.

#### HOT AIR.

It has been doubted by some practical men, whether the expense of making hot air would not counterbalance the subsequent gain: the reverse of this is said to be the result of a persevering trial made at the Clyde iron-works, where the air, before it is thrown into the blast furnaces, is heated to 220 degrees of Fahrenheit in cast iron vessels, placed on furnaces similar to those of steam engine boilers. According to a statement in the *Glasgow Chronicle*, this improvement is calculated to accomplish a saving of fuel in Great Britain amounting to 200,000 tons per annum. The fact that air is not fitted to promote combustion until it reaches a high temperature being admitted, the question, so far as concerns the saving of fuel in the smelting of iron is simply this: whether it is most economical in respect of fuel to heat the air in the smelting furnace, where it comes into contact with the coke, and carries it off in the form of carbonic acid gas, or to heat it previously in a separate furnace? The experiments at Clyde iron-works show that it is heated in the separate furnace with one eleventh part of the fuel that is required to heat it in the smelting furnace, when allowed to come in contact with the coke. One reason why this should be the case is obvious: in the smelting furnace the air is heated with coke, in the separate furnace with coals.

Individuals who have written professionally on the subject of iron-smelting, have noticed as facts two circumstances which the experience of workmen generally corroborates, but neither of which seems to have been very satisfactorily accounted for. We allude to the practical discovery, that although a strong and steadily sustained blast is essential to the production of a large quantity of metal, and is of itself the improvement which mainly characterises our modern furnaces, yet that there is an undetermined maximum of available blast, or amount of air blown into the furnace, beyond which the effect is nugatory, or injurious to the operation of reducing the ore. It appears then, when the volume of air injected by the tewyre is either too great, or driven too violently forward, instead of promoting combustion in the ratio of its impetus, it is carried through the materials unconsumed, the cokes at the same time being blown away before they can efficiently co-act with the fluxes; in consequence of which the ore falls either not at all, or but partially liquified, into the earth below. To avoid this evil, and at the same time to bring the blast to bear upon as large a surface as possible, it has been introduced on opposite sides of the furnace, and by this it has been most largely and economically applied. The quantity of air thrown into a furnace per minute has been computed at upwards of seventeen thousand gallons, and at a pressure of two and a half, or three pounds per square inch; if then it be correct, as chemists have asserted, that six inches of vital air are absorbed in one minute by each individual of our species, the quantity of this element consumed by an ordinary blast furnace is equal to that required by 200,000 persons. It may be added here, as giving some idea of the consumption of fuel in the smelting process alone, that according to computation, the iron-works of Carron, in Stirlingshire, burn annually as many coals as would be required by a city containing 700,000 inhabitants.—*Cabinet Encyclopedia.*

#### STONE QUARRIES.

**Building Stone.**—England is most advantageously situated in a geological sense. There is no tract of country in the world of equal extent, that has such vast reservoirs of coal and metal; and there is none that has so much and so good building stone. Our marbles may not be so fine as those of Italy, but our building stones are good, and may be obtained at a comparatively trifling expense. The great improvements which have been made in the construction of bricks, and their strength and efficiency have tended to do away with the necessity for the use of stone. We have, however, many evidences of the great antiquity of the art of building in stone. There are in existence not only remains, but entire buildings of very ancient date, and some of these are objects of wonder, even at the present day, some from the elegance of their forms, and others from the immense size of the materials of which they are constructed.

**Stones for Masonry.**—The stones most commonly used in England for heavy masonry, are the Reigate stone, Purbeck stone, Free-stone, Portland stone, and Granite. Reigate or fire-stone, is a freestone, capable as its name imports of withstanding the effects of fire, and is therefore used in all those parts of a building where it is exposed to its action, such as hearths, ovens, and stoves. It is chiefly obtained from Sussex. Purbeck is a hard greyish stone, and is chiefly used for pavements. It is capable, from its very compact texture of being wrought to a very smooth face, and will bear a slight polish. There are several kinds of freestone, and they are obtained in different places. When first taken from the quarries, freestone is, in general, very soft, but by exposure to the atmosphere becomes much harder. It may at first be easily cut with a common saw, and may be worked almost as easily as a piece of timber; but after exposure to the atmosphere for a few weeks, it becomes very hard. Bath-stone is one of the best freestones obtained in this country, and is preferred to all others when it can be procured at a moderate price, for it has, in an eminent degree, the property of hardening by exposure to the air, and is not apt to chip and peel as many others are. It is a fine sandy grit of a whitish colour, and from the ease with which it is worked, is well adapted for chimney pieces, jambs for windows and doors, the dressings of windows, and for other external work. Portland stone is somewhat similar to the purbeck, but softer and whiter, is raised in much larger blocks from the quarry, and is of very extensive use in building; it will not, however, stand the fire, but well endures the vicissitudes of the weather. It is, perhaps, the best common stone for building, having sufficient hardness, durability, and equality of texture for every purpose in building, added to which its comparative cheapness, and the large size in which the blocks are or may be raised, makes it vastly superior to the purbeck. Granite has of late been very much used in building, particularly where strength and durability are required. This stone has a very hard crystalline structure, and resists the usual methods of working. It is reduced to the form required, by pecking, with a kind of hammer, somewhat similar to a pick-axe. It is found in large quantities in many parts of the West of England, particularly in that district called Dartmoor's, near Plymouth, though it is a prevailing rock throughout Cornwall. It also abounds in many parts of Scotland, that brought from Aberdeenshire is much esteemed. This stone is particularly valuable in those situations where there is much wear, as, for instance, in the steps of public buildings, the curb stones of pavements, the pavement or carriage-way of roads, and the piers of bridges. Waterloo and London bridges are almost wholly composed of granite, both of which will long remain as monuments to the skill and talent of the architects who designed and constructed them.

*Smeaton's Builder's Manual.*

**Meteoric Iron.**—M. Gruithausen of Munich, has discovered indubitable proofs of lunar habitancy—high roads and a colossal edifice—perhaps a lunatic asylum; a rail-road, to ascertain the accuracy of the discovery, is announced, and the surveyors are the Messrs. Green. By the bye, why should not the large pieces of iron, found in different parts of the world, and which astronomers and geologists tell us have been ejected from the moon, be part of an old rail-road, or the exploded portions of a boiler?

**Menai Bridge.**—In that wonderful structure the Menai suspension bridge, the effect of the expansion and contraction of the chains by heat and cold is ingeniously provided for, by passing the chains over rollers placed upon the top of the towers over which they are slung. In 1830, when the mercury was 18 deg. below the freezing point, it was found that the bridge, which weighed more than twenty thousand tons, had risen six inches and a half above its level, and the extremes between its relaxing on the hottest, and its contraction on the coldest day, is more than a foot.



## MINING STATISTICS.

## THE GREAT CONSOLS.

We have just been informed that a very valuable discovery has recently been made at the bottom of the Great Consols mine, in the parish of Gwynnapp. We believe this to be the deepest point to which the globe has been penetrated by any copper mine; and the deepest but one in the known world, namely, Monk Wearmouth colliery, in the county of Durham. A little more than a century since our Cornish mines were but little worked for copper, tin being the chief commodity; and the operations were confined to a few fathoms only from the surface, the drainage being effected by tackles or whims. Wheels and leverage were next employed in the drainage, through the agency of that element which they wanted to remove, and these enabling the antients to penetrate a few fathoms further into the crust of the earth, were accounted wonderful discoveries, and being worked to the extent of their power, from forty to fifty fathoms from the surface, and the lodes frequently becoming poor before or about that depth, the mines were as frequently abandoned under the idea that they must needs be worthless below the different points where the lodes had ceased to be productive; and that even if the lodes were not exhausted it surpassed the wit and ingenuity of man to devise more effective means of drainage. Accident had frequently developed the power of steam, and the inventive faculties of man were taxed in order to turn that power to account; these were not exercised in vain, as the gigantic powers of the steam engine soon demonstrated. Bolton and Watt, and steam engines were now on every tongue; yet, aided by this surprising power, the most sanguine scarcely dared anticipate piercing the earth's crust far beyond a hundred fathoms, and the few who dared extend their views so far, were laughed at by the many as enthusiastic visionaries. Subsequently the single engine was doubled, and the hopes of the sanguine appeared to be better founded; but, with several draught lifts of boxes hung to her nozzle, the steam engine was still a sluggish operative power; the box lifts made way for plungers; the hitherto sluggish machine came in and out of doors with almost equal ease, and the most incredulous acknowledged her almost unlimited power. We now see the anticipated power of this wonderful machine multiplied, how many fold we are not sufficiently versed in hydraulics to determine; and the engineers, who so lately figured in the columns of the *Mining Journal*, having one and all simultaneously quitted the arena, we must no doubt remain in blessed ignorance of the matter. One thing, however, is certain, we behold the wonderful productions of our valuable mines extending to far more than double the depth to which in the old "high and palmy state" of mining they were considered to extend, or, extending, to be attained. We behold these indispensable treasures still extending, and still attainable, through that potent agent the steam engine, which is daily being rendered more effective through the wit, the ingenuity and the necessities of man. Seeing that the far greater part of the mining operations, alluded to in this brief and hasty sketch, have been effected within the memory of our sires, and not a little of them indeed before our own eyes—seeing that these operations, extensive as they may appear to our limited comprehensions, have as yet comparatively speaking scarcely penetrated the crust of our globe, who will dare to limit the boundary to which the valuable mineral productions of this country may extend, or to confine that expansive force by which they are so readily and so profitably attained?

## MINING CORRESPONDENCE.

## ENGLISH MINES.

**NORTH CORNWALL MINING COMPANY, Wheal Thomas, Jan. 9, 1836.**—Since our last report, the eastern end of 17 fathom level is improved; west end at same level not quite so good. We are sorry to inform you that there has been but little done in Wheal Thomas since our last report, in consequence of breaking the crank in the Water Wheel, we are to have a new one on Monday; there is no particular alteration in the 8 fathom level since our last.—*Wheal Hope.* The adit level continues much the same; ground rather harder in the 12 fathom level, with increased quantity of mundie, but no improvement in regard of lead as yet. No alteration in the twenty fathom level this week. We have been through the 28 fathom level as far east as Eastern shaft level standing very secure, there must be some repairs about the shaft. We have also been through the 38 fathom level; found this level standing very well 40 fathom east of Engine shaft. We commenced on Wednesday morning to drop the lift in Engine shaft, our progress was impeded by some timber across the shaft under water, so that we were not able to drop more than 15 feet. We have forked the water to that depth, and our shaft men have been down this day, and removed some of the timber, and we hope to be enabled on Monday next to drop below the 48 fathom level. The lead dressed and weighed in this month is 2 ton 6 cwt. **JOHN BORLASE.**

**POLBREEN MINING COMPANY, Jan. 9, 1836.**—I beg leave to inform you that we have again commenced desuing the lode in the bottoms and deep adit end. The preparatory work for sinking under the shallow adit at Stainsby's engine shaft will be completed early in the ensuing week, and also at Thomas's whim shaft, under the middle level. At Vice's shaft we are now about 2 fathoms under the shoal adit, and I am happy to say that the ground has the most promising appearance, being quite alive and abounding with rich branches of tin. **R. ROWE, Jun.**

**SOUTH WHEAL LEISURE MINING COMPANY, Jan. 9, 1836.**—I can only repeat what I reported on the 24 inst. We are continuing to sink the engine shaft in a favourable stratum of ground, and the water still manageable; it is now down below adit 9 fathoms and 3 feet. With respect to surface operations, all are going on rapidly. **R. ROWE, Jun.**

**EAST CORNWALL SILVER MINING COMPANY, Jan. 11, 1836.**—I beg leave to report to you the state and progress of these mines. *Wheal Merico.*—The new shaft (Budge's) sinking on the eastern end of the adit is down 6 fathoms. *Wheal Emily.*—Since the adit end has been resumed, the lode has much improved both in size and quality; the whole lode, exclusive of the caples, is 18 inches big, and the leader 10 inches. *Wheal Georgiana.*—Atkinson's shaft has been sunk upwards of 5 fathoms. The lode in the end is from 20 inches to 2 feet wide, and has much improved in the last 2 fathoms driving. *Wheal David.*—Stainsby's shaft is down 54 fathoms; the ground proves favourable for sinking. In the end going west the lodes are again drawing together, and the appearances promising. By recent assays, we find silver in all the levels, but not rich; the highest produce being 30 ounces per ton. *Wheal Virgin.*—The water in Snell's shaft is decreasing, being partially let down by the cross cut. We intend to get the water out (which is now only 2 fathoms), and set a pair of men to sink immediately; we shall also be in far enough south to commence rising against the shaft from the cross cut in a day or two. Our castings for the engine have not yet arrived: a letter from the founders on Saturday says they are all ready, and in daily expectation of the arrival of the vessel to take them in. **J. BUDGE.**

**ALBION MINING COMPANY, Jan. 12, 1836.**—The lode in the 60 fathom level east from the cross cut on the counter lode is 2 feet wide, producing about one ton per fathom. The lode in the 60 fathom level west from engine shaft is 4 feet wide, producing a little ore. We expect we have about 6 or 7 fathoms further to drive this end, before we meet with the branch gone down west of the winze. The same level east from shaft at present poor. The lode in the winze under the 47 east from shaft on the counter lode is 2 feet wide, producing 2 tons per fathom. The lode in the 47 east from engine shaft is 24 feet wide, producing about one-third of a ton per fathom, and has a kindly appearance. We have cut the north lode in driving north from the 60 fathom level west, which is about 9 inches wide, producing spots of ore. I cannot speak of any thing new in the other parts of the mine since my last. We have commenced driving the 54 fathom level at Wheal Mithian; we find the lode east and west from shaft to be very large, producing mundie and spar, and has not an unpromising appearance. The lode in the 40 fathom east is still large, producing stones of ore. The lode in the 40 west is large also, but poor. The lode in the 30 fathom level east from engine shaft at present small. Yesterday we set a pitch in the bottom of the adit on the south lode 13s. 4d. in the pound for lead and silver ore. **J. MIDDLETON.**

**TELEIGH MINING COMPANY, Jan. 9, 1836.**—Our men are all regularly employed in working their respective bargains as noticed in my last report. The ground in the engine shaft is rather better, the men have sunk about 24 feet. In the deep adit level on Maria lode, the men have driven 6 feet; the lode is in two parts, yet the leader continues its full size, and produces good stones of ore. The south lode at this level is small, the men have driven about 6 feet. Our western shaft under the shallow adit is getting down well, and will be a great advantage in extending these levels, both for air and discharging the stuff; the men have sunk

8 feet. The lode in the shallow adit, east of the engine shaft, continues much the same, the men have driven 5 feet, but the pitch in the back is not quite so well, it is a bunched lode. In the shallow adit, on Wheal Maria lode, the men have extended 6 feet, the lode is large and kindly composed of a fine gossan spar and mundie, with good ore. The deep adit, west on Shanger lode, is much improved in quality, producing more ore; but the end, west of the cross cut, on the same lode at this level, is not so good, although saving work 2 feet wide, and the men have driven 6 feet. At Wheal Christoe we have a large gozzan lode, producing little ore and a quantity of water; the men have extended this level 5 feet. The winzes under adit on Maria lode, we cannot say much about, the men have just opened the level, and taken up the water to prepare for sinking; our pitches, sat at 5s., will do little for the tributers, and, perhaps, we may be obliged to re-let them. **W. SINCOCK.**

**ST. HILARY MINING COMPANY, Jan. 9, 1836.**—I have the pleasing satisfaction of announcing to you, that we have this week communicated the cross cut from the new engine shaft in Wheal Leeds, at the 20 fathom level, and entirely unwatered the mine to that depth under the adit. We have been compelled to suspend preparations for sinking the new engine shaft under the 21 fathom level, until we had completed the drainage of the old workings to the 20. We shall, however, resume this work again next week with increased energy; we shall also explore the old workings as far as we have unwatered them, and take immediate steps for clearing and extending the 20 fathom level east and west on the Wheal Leeds lode to open new ground. We continue to drive the adit level in Retallie ground on Mountserratt lode, the ground is good, we pay only 24s. per fathom, and it requires no timber. To expedite the drainage of the old workings, it became necessary to work the engine considerably faster, and I have the pleasure in saying it has done so in a very satisfactory manner. **C. N. BEATER.**

**REDMOOR CONSOLIDATED MINING COMPANY, Jan. 11, 1836.**—There is no alteration in sinking the Double Whim Shaft on Johnson's lode below the 10 fathoms level since the 4th inst., but at that level extending west it is large and impregnated with tin and copper ores in a promising quantity. The 30 fathoms level is continuing eastward from Johnson's shaft in favourable ground. At the 20 fathoms level driving east from this shaft, the ground is rather improved, not being so hard as before. The engine shaft is sinking in killas of a kindlier and softer description than I have observed for several months. **W. PETHERICK.**

**PERRAN CONSOLS MINING COMPANY, Jan. 11, 1836.**—The adit levels which we are driving east on Mudge's lode, and west on Anthony's lode are improved, from both these ends we have raised some rich ores this week. The sumpmen are just ready to commence sinking the engine shaft below adit. In the cross cut driving northward from Mudge's lode, we have cut the old adit, and have recommenced the clearing up of Anthony's shaft, which we were obliged to suspend 2 months ago in consequence of the water—the shaft is now dry, and 2 fathoms more will put it down to the adit level, and when complete will give us a good current of air for the driving eastward on Anthony's lode, which we shall set agoing as soon as possible. Our erections have been greatly impeded this week by the heavy falls of rain we have had. **JAMES GRIFF.**

**ROCHE ROCK MINING COMPANY, Jan. 11, 1836.**—In the course of the last week our levels generally have become harder, but the agents expect a favourable change shortly, as the lodes have been in several parts of the mine subject to cross courses, which has been the case in the present instance. The extent of ground set to the men on Saturday has been in consequence limited. The new lode at the 40 fathom level has been just cut, it will be opened on immediately. Every exertion is making to extend the levels on the course of the lodes, which I hope will prove successful. **J. TREESTRALE.**

**NEW CRENNIS MINING COMPANY, Jan. 11, 1836.**—We have now cut the lode in sinking the shaft under the 55 fathom level, which has a favourable appearance, as producing tin, though not rich. We have a good branch of tin in the 22 fathom east on new lode, about 6 inches wide, and the lode in the 55 fathom west has improved. We shall, as soon as possible, dress up all the ores of tin and copper rose prior to the 1st of this month, so as to make but one sale of it. **W. BROWNIE.**

**KEERROW MINING COMPANY, Jan. 11, 1836.**—Having driven the two cross levels a sufficient distance for the objects contemplated, we have put one of the pairs of men to drive the adit west, where the lode is large, and has a very favourable appearance. The other pair of men we shall put on discovery in various parts of the sett, from which I expect the most beneficial results. We have agreed for a 40 inch cylinder engine to be delivered by the end of April, and in the mean time we shall push the surface work, and I have no doubt of being able to get it to work in the month of May. **W. BROWNIE.**

**CARN GREY MINING COMPANY, Jan. 11, 1836.**—Since my last we have nothing of importance to communicate, and though it may appear that our mine is looking at present rather gloomy, yet when we recollect that we have only 5 fathoms more to sink before we shall be again in tin ground, with a back of 10 fathoms, we are confident of brighter prospects. The lode in the 12 fathom west, though at present unproductive, has a favourable appearance, and is large and regular. Our operations in both adits have been lately, from various causes, impeded, but are now in a fair course of working, and I have no doubt the importance of these levels will develop itself to the entire satisfaction of all parties concerned in about 2 months. **W. BROWNIE.**

**EAST WHEAL STRAWBERRY MINING COMPANY, Jan. 11, 1836.**—The underground operations in this mine are going on very satisfactorily, and there is nothing new to notice except that in sinking Groat's whim shaft below the 15 fathom level, we intersected a branch about 15 inches wide underlying north, of a promising appearance, composed of quartz, carbonate of iron, and other substances congenial to the produce of tin ores. **WILLIAM PETHERICK.**

**TAMAR SILVER LEAD MINING COMPANY, Jan. 11, 1836.**—Notwithstanding the inadequate size of the pitwork delivered on the mines, (the founders having only partially performed their contracts), the water has been drained about 11 fathoms under the adit. We intend putting down a larger lift in the course of a few days. **THOS. PETHERICK.**

**BRITISH TIN MINING COMPANY, Jan. 11, 1836.**—The ground in the cross cut at the 12 fathom level is not so favorable as last report. We expect to finish our plat this week at the 12 fm. level. The lode here is very regular, producing some tolerable work; the lode has an improving appearance, and is from 6 to 7 feet big. In extending east and west on this lode, we shall send a great quantity of tin stuff to surface. After clearing out the water and attle in the winze alluded to on the counter lode last week, we find the lode about 12 inches big, with a branch or leader about 1 inch big, very rich, and the ground moderate, but the water is more than we think practicable to sink with, as we expect, so soon as we intersect the next lode, to bottom the water will be all down out of the winzes. The ground in the adit and on Dyer's lode is just the same as last week, the lode is about 1 foot big, and tiny. We think we shall suspend this end till the water in the western adit is drained down, which we think will be down in a short time, fearing we should let down too much at once. The tribute pitch on Fagan's lode is suspended for the time. **R. R. GEACH, J. BRAY.**

**REDRUTH UNITED WHEAL URRY, Jan. 11, 1836.**—The lode in the engine shaft is about 44 feet wide, and has just the same appearance as I stated in my last. The lode in the 32 fm. level west continues large, and not without copper ores, but not rich. The lode in the 32 fm. level east of the engine shaft is large, and produces a small quantity of tin ores. The lode in the 22 fm. level east of the engine shaft is about 3 feet wide, producing tin ores. The lode in the 12 fm. level east of the engine shaft has just the same appearance and size as last reported. The lode in the rise against Cock's shaft is 2 feet wide, not rich. There is no alteration in Goodhinge's shaft, or in the rise against it since my last. The lode in the adit level east of Goodhinge's is about 6 inches wide, at present poor. We expect to hole Cock's shaft to the rise in the course of the week. At Bockett's the branch we are driving on is producing a small quantity of copper ores.

**Great St. George, Jan. 12, 1836.**—I have no news to impart respecting the underground operations of either of the mines; I can, however, say that on the whole things are looking rather better than worse. We sample to-day at Great St. George 445 tons.

**BRITISH COPPER MINING COMPANY, Great Wheal Charlotte, Jan. 13, 1836.**—I have nothing of importance to communicate this week respecting the appearance of the mine, save that the lode in the 52 fm. level east continues to improve; its size is from 3 to 4 feet, and the ores are of excellent quality. **JAMES SPYTHENS.**

## FOREIGN MINES.

**BOLANOS MINING COMPANY, Oct. 16, 1835.**—In Bolanos we continue lowering the water, and it is probable that in a fortnight we may reach the bottoms of Cocina again, which is about the time I stated in my last. A transverse section of San Jose and Conceja shaft, will give you a correct idea of the depth at which we propose driving the bottom cross cut, and also of the one we have already begun observing that their lengths will only be found correct if there is no alteration either in the underlay, or the direction of the vein. The advantages which we expect to derive from this new plan, are first, that by the 170 vara cross cut, called the Cruzero de Santa Thomas, we shall drain all the bottoms of Cocino and Conceja, and also prepare ventilation and footway in a more impracticable should the plan of getting to the pillars from Conceja, the pillars by ble; secondly, that it will be less dangerous to work on, as to have a sinking than by rising, and this would be the case if we were to have a 200 vara cross cut, as formerly proposed; third, that the 230 vara cross cut will try the vein much below the old bottom of Barranco, and ascertain in a decided manner whether the rich bunch of ore continues downwards or not.

**Oct. 20, 1835.**—We have had nothing new since my last respects, except that we have some hopes of a conducta before the 15th November.

**ST. JOHN DEL REY MINING ASSOCIATION, October 18, 1835.**—Since the last report, we have made very good speed in driving the Bandeira level, and last week contrary to our expectations, holed to some old workings, which we found full of water, the deepest part of them as far as we have hitherto seen is about 8 fathoms above the shallow Adit level. We have ascertained from inquiry that these workings were made about eight years since by Sen. Alfares de Sampay. We have cleared a great deal of mud and rubbish from them, and have taken a sample from the Cabeceira or from the place where the former proprietors last worked, but it proved poor, although the lode is extremely promising and very large. This is no part of the workings made by Mr. Stallfield while he was associated with Capitao Luis Soares, which I stated in my last letter that I hoped to reach before the end of this month. We are still using every exertion and are working every hour without any exception whatever, to get this level under the rich part of the Cavaco Mine as soon as possible.

From the great number of sick amongst our Englishmen, we have been obliged to suspend some of our works. Oxenford's 47 fathom level is now idle in consequence, and I think that as a greater number of men will be required for McDonnell's shaft, on the completion of the small engine now building for it, it will be advisable to allow Oxenford's to remain idle for a short time, to supply the requisite number for McDonnell's, as the former is at this moment a place of minor importance.

At Halfeld's shaft we have not yet met with any better success. We have driven the 50 fathom level west on the course of the lode several fathoms, but have not yet cut any other veins; we are, however, according to the plan of the mines very near the run of some of them, and I hope to be able to report them cut by the next post.

The samples from Antonio Dias during the last ten days have been very poor; but, notwithstanding, there is some improvement in the produce from the stamps. We are still driving west on the course of the lode, but we have not yet made any discovery. On both of these places, Halfeld's and Antonio Dias, as well as Manlofilis, changing houses have been partly erected for the miners, with an idea to prevent theft, but finding the veins so poor that it is very seldom, indeed, that any gold is visible in the lode underground, we considered it unnecessary to complete them until we see something of more value to warrant it, particularly as strong gates have been fixed on the different places, and the ingress and egress of the men attended to by an officer. In the sinking of Waller's shaft we have been rather unfortunate. We put in a new working pump last week in the place of one that was very much worn, in hopes it would prevent any further delay; but we find it equally necessary to change another in the upper lift or column of pumps; this we shall not be able to do for some days, as the wood we have on the mine is very green and unfit for such purposes. We have, however, some very dry iron wood selected for the working pumps of McDonnell's shaft, which I hope will be on the mine in a few days, when some of it will be immediately prepared for Waller's. The ground in the cross-cut north of this shaft is still very favourable, neither requiring gunpowder for blasting, nor timber to keep it open. In the shallow adit there is scarcely any alteration since my last report. The ground in the deep adit is also without alteration.

I beg to acknowledge the receipt of the Board's letter, original, dated 5th August, 1835, together with a duplicate of that of the 8th July.

By a reference to the Gold Book I find that the produce for the last ten days has been—

From the stamps	2	3	3	16
From Halfeld's canvas	0	2	3	6
Total Marcs	2	5	6	22

GROUND EXPENDED.	FMS. FT. IN.
Deep Adit..... Driven.....	0 3 6
Shallow Adit..... ditto.....	0 3 6
Bandeira Mine..... ditto.....	5 0 0
Waller's Cross-cut..... ditto.....	1 5 0
Halfeld's 50 fathom Level ditto.....	3 3 0
Halfeld's Rise..... Risen.....	5 1 0
Antonio Dias, West End driven.....	2 2 6
Ditto Cross-cut, South..... ditto.....	2 0 0
Ditto East on the lode..... ditto.....	1 5 0
Ditto on the different veins sunk.....	5 0 0
Manlofilis on the latvein ditto.....	3 0 0

**J. HITCHENS.**

**MACAUBAN AND COCAER MINING COMPANY.**—In the last report I stated that we had taken some very good samples from Antonio Dias, but I am now sorry to say that this improvement lasted but for a very short distance, and the vein has been ever since, and still continues very poor, consequently the produce from the stamps for the last ten days is very little. We are extending on all the veins in hope of an improvement, and are driving a level westward from the bottom of Morgan's shaft, through the piece of virgin ground, lying between this shaft and Antonio Dias cross-cut driven by us. Wide small plan of this part of the mine. The lode in this end has hitherto been rather unpromising, but as it is going all in new ground, it may perhaps lead to some discovery of importance. Our attempts to reach the veins by a run shaft in the cavaco, which was stated in the last report to have been commenced, has proved fruitless; after sinking it about five fathoms we reached the water, and were obliged to abandon it in consequence, and we are now under the necessity of waiting for the bandeira level to intersect the veins which is now the nearest practicable point, and in order to expedite this work as much as possible, we have offered the men employed here a good premium for their extra exertions, during their proper hours of labour, and on Saturday night, Sunday and Sunday nights, which is considered their own time, we have induced them to work by giving them a price per fathom for as much as they can drive between Saturday night and Monday morning, which is about an equivalent to their wages, £8. per month, and of course will be paid to them in addition to that sum. Thus you see that not a moment's time is left in this place, and every thing tending to hasten returns has been done, not only in this place but throughout the mines. We have about 30 fathoms more to drive to the point in the Cavaco, which information says is the richest, and should the ground continue as favourable as it is at present, I have no doubt we shall be able to drive this distance in about two months from this time, but I wish it to be understood that long before this we shall reach the rich ground on which Mr. Halfeld worked for Captain Luis Soares, who left it on account of the great quantity of water in their works, and their inability to keep it dry. On this account the Shallow Adit was commenced by him, and abandoned only for want of slates to carry on the work; the present end in the Bandeira Mine to this ground is about 4 fathoms, and perhaps we shall be able to reach it before the end of the month. The lode at present is tolerably promising, and shows gold in the Hateria, but is yet too poor to be worth our notice. At Halfeld's, since huling to the old workings of the Kago, we have been greatly impeded in our labours by bad air, although the two air machines, capable of keeping up a continual blast, have been placed on the shaft. We have, however, made some progress in driving the 50 fathoms level towards the other veins, but up to this time the samples from it have been poor, as also those from the vein already discovered, which we have been stripping down from the back of this level toward the old workings above. At Waller's very little has been done towards sinking the shaft on account of one of the working pumps being very much worn by the friction of the bucket—we have, however, a new one nearly ready to put in,



which I hope will obviate any further difficulties there; in the cross cut from this shaft towards the shallow adit the ground is tolerably favourable, and we are making good progress. At Oxford's nothing has been done on the lode during the last ten days, it being necessary for the security of the shaft during the wet season, to put in a great deal of timber work, about which the men have been employed. The lode in the shallow adit is very small, and the ground still very hard, consequently our progress here has been very slow. The work for Macdonnell's small engine is in a very forward state. The men employed in driving the 21 fathoms level, at this shaft, have been withdrawn, to assist in boring the pumps, therefore nothing has been done on the lode for the last ten days. The ground in the deep adit is without alteration. By a reference to the gold book I find the produce since last reported is:—

	oz.	dwt.	grs.
From the stamps .....	8	5	47
From Halford's Commons .....	2	7	7

Mark. 1 3 4 54

Ground Expended, &c.

Mines.	Description of Work.	Fathoms.	Feet.	In.
Deep Adit .....	Driven.	—	2	—
Shallow on the lode .....	Do.	—	5	—
Hanley Mine .....	Do.	6	—	—
Waller's Cross-cut .....	D.	1	—	6
Stopping the bottom of ditto .....	Do.	8	—	—
Halford's 47 Fathom Level .....	Do.	1	—	—
Antonio Dias, 2d Winze .....	Sunk.	1	4	—
Antonio Dias, 2d Rise .....	Do.	1	—	—
Carnoo Shaft .....	Do.	5	—	—
A new end west of Morgan's .....	Do.	—	—	—
Shaft on the course of the Lode .....	Driven.	4	3	—
Halford's Rise .....	Run.	—	3	—

### ACCIDENTS IN MINES.—THE DAVY LAMP.

Extract from the Evidence of G. Gurney, Esq., before the Parliamentary Commissioners.

What is your profession?—My original profession was medicine; I have been more particularly engaged in mechanical and chemical pursuits during the last ten years of my life.

Are you acquainted with the mining districts of England, generally or locally?—I am more particularly acquainted with the mining districts of Cornwall, and of the western parts of England, than with those of the north.

You are aware of the fact, that the mining districts of the North of England particularly are annoyed by what is called fire-damp?—I am aware of it.

Are you acquainted with the nature of fire-damp?—It is a subject on which I have made extensive experiments; I have chemically investigated the composition of fire-damp often; I believe I am acquainted with most of the states of mixture and chemical composition, in which it is found in coal mines; I have analyzed also some of the fire-damp which is found in the Welsh mines, which however is not extensive or dangerous. I believe I am acquainted with the nature of "fire-damp" generally.

Will you have the goodness to give to the Committee a simple definition of the nature of fire-damp?—Fire-damp is generally a mixture of carburetted hydrogen, and atmospheric air; sometimes it contains a portion of free hydrogen, but most commonly it is atmospheric air and carburetted hydrogen, with pure hydrogen alone; this was the case in a Welsh mine which I examined. Often it is also adulterated with other gaseous mixtures; but those first stated form the principal.

In what state of mixture with the atmosphere do you consider it most explosive?—One in four is explosive; below that it is scarcely so; as it approaches to one proportion in nine it becomes more and more explosive. From the experiments I have made, I should say, that one in eight, or one in nine, is the most explosive mixture of carburetted hydrogen and atmospheric air.

In the course of your scientific researches, have you made any experiments for the purpose of determining the temperature at which explosive mixtures will take fire?—About 500 degrees of Fahrenheit; I made a long series of experiments with this view in 1822. The result of those experiments was certainly interesting. Practically I found that it required a body at a white heat to ignite a mixture similar to the fire-damp, when, in fact, the fire-damp requires only from 500 to 600 degrees of Fahrenheit. The reason why this difference exists arises from the circumstances under which the heat is applied. If a red heat, a red-hot iron for instance, which is about 800 degrees, be plunged into a certain quantity of fire-damp, the particles of gas pass so rapidly away from the heated body, as soon as they are a little warmed, in virtue of their change in specific gravity, as not individually or collectively to arrive at a sufficient temperature for ignition, viz., to that of 500 or 600 degrees; therefore a red heat applied to an explosive mixture of fire-damp will not ignite it; but if you place white-hot iron, under similar circumstances, into a vessel of explosive mixture, the particles, mixed in contact, cannot pass off before they arrive at 500 degrees, therefore it will instantly explode. The gas in the former instance moves so rapidly away as not to arrive at a sufficient temperature for combination; but if you confine the gas so that it cannot escape, and thus raise the heat of the whole to 500 or 550 degrees, it then will take fire.

Under those circumstances, have you made many experiments with the wire-gauze?—I made a great number of experiments about the same period, principally with a view of burning with safety, for the purpose of obtaining a powerful and intense heat, a mixture of oxygen and hydrogen gases, which is the most explosive mixture known.

That was at the same time with the experiments you have alluded to?—Yes, it was; those experiments, from their results, being new and unexpected, were carried to a great extent; I found that no kind of wire-gauze, with any practical number of holes in a given surface, would prevent the passage of flame produced from such mixture under certain circumstances or through the smallest possible tubes. This led me to make experiments on wire-gauze, as connected with the safety-lamp used in mines. The results of those experiments proved, that if an explosive mixture, such as is found in coal mines, was made to pass at the rate of about 300 feet a minute through the meshes, that the flame would pass the gauze, and inflame an explosive mixture on the opposite side; or if a wire-gauze lamp was made to pass or moved through an explosive atmosphere, at this rate (namely, 300 feet a minute or faster), it would explode it; but, I found invariably, that if the wire-gauze and explosive atmosphere was steady, or if neither moved at a rate above that which I have stated, there was no explosion. If however they did move at this rate, or at a rate above it, that it then would explode. At a rate far less than this I could explode a mixture of pure hydrogen and atmospheric air, which however is seldom found in mines. This mixture may be exploded through "80-hole gauze," the finest mesh. In further experiments with the wire-gauze lamp as a means of safety in mines, I found that if any inflammable matter was on the outside of the wire-gauze when burning in an explosive mixture, that the heat of the gauze would ignite that inflammable matter, which arriving at a white heat, would ignite the explosive mixture on the opposite side, and thus produce explosion of the whole.

That is to say, that though the wire-gauze might not actually be white-hot itself, that any foreign matter on the external surface of that wire-gauze might be heated to such a degree as to occasion explosion?—That is precisely my meaning. If in practice, for instance, a small piece of coal, a small portion of sulphur, or any such inflammable matters which may be found in mines, was to fix itself on the outside of a safety-lamp, it would be raised to a red heat by the wire-gauze, which matter would, by the external atmosphere going to feed the flame within, be soon fanned or raised to a white heat, and thus communicate sudden explosion to the surrounding atmosphere. Some part of the wire-gauze of the lamp is generally at a red heat when fire-damp is burning within it.

Are you aware that in most of the coal formations there are particles of coal nearly resembling carbon?—I am not practically aware of it; I have heard it stated.

Those particles would be specifically lighter than what is called the complete formation of coal?—They would, and float in the atmosphere, depending entirely in degree upon their extent of surface; if we extend gold, which is one of the heaviest metals, we may make it so light as to move with or float in the atmosphere; and so the particle of coal, diminished in magnitude, or extended in particular form, would become so light as to float about.

Then any substance similar to common charcoal would be particularly liable to ignite under those circumstances?—I think it would: its arriving at a white heat on the outside of a safety-lamp would depend upon the current of air that was at the same time passing against it. Charcoal, unless it is exposed to a current of air, which feeds it with oxygen, remains at a red heat: in such a state it would not inflame fire-damp; but if a slight current of atmospheric air was to blow or impinge upon it, it would quickly arrive at a white heat, and then explode fire-damp.

You are aware of the invention of Sir Humphrey Davy, for the protection of the miner working in an impure atmosphere?—Yes.

What do you consider to be the rationale of that invention?—The rationale of Sir Humphrey Davy's safety lamp is connected with the radiation of heat, which is so rapid from its surface that the temperature of the wire-gauze is so kept under as to prevent the passage of flame; or, in other words, to prevent combustion or ignition of the small portions of gas which happen to be within the interstices. You cannot, under ordinary circumstances, raise wire-gauze to above a red heat, consequently at that temperature an explosive atmosphere will not take fire, provided that it be stationary, as I have before stated; but in case of a certain rate of motion, the flame is driven further into the interstices, and at length comes through, in time, and in danger proportioned to the mechanical force, governed by the rate of current.

Give the Committee your general opinion of the comparative safety of that lamp?—I think the lamp is perfectly safe if the atmosphere is kept tolerably steady, and there is no free hydrogen in the explosive mixture; but I think if hydrogen is mixed with the atmosphere, then the lamp would not be safe, even under stationary circumstances. I think the lamp is safe in a carburetted hydrogen mixture, if at rest; but if moved at a rate of or exceeding 300 feet per minute, I do not think it would be safe. I cannot speak to the extent of practical danger arising from the facility to the waton or careless exposure of the naked flame, which perhaps in practice is impossible to be prevented. I am fully aware that miners will take off the gauze to light their pipes, or to get more light, for at best it gives a feeble light through the wire gauze, and they are strongly induced to take it off to get more light when at work.

Then it is no protection to a man at work, where there must always be a current of air?—I do not think it is a positive protection; I think it is a partial protection. I think that fire-damp might burn within it safely for a time under some circumstances, and give notice of a dangerous state of the atmosphere by the observed phenomena in such cases.

You are not aware, as not being a practical miner, whether it is or is not the habit of the miner to work for hours together with that lamp full of flame?—No; I do not of myself know it, I have heard it stated.

Was the lamp of which you speak surrounded by a glass chamber?—No.

Is it not frequently so constructed?—I understand it is now often so constructed.

Under those circumstances, what would be your opinion of its safety?—I think, if the glass is kept sound it will remove much of the danger of the lamp, but not all; there must be an inlet for air to feed, and an outlet for it to escape from the lamp, which I do not see can be protected by glass.

Is your opinion against or in favour of Sir Humphrey Davy's lamp?—My private opinion, as I am asked it, is, that it is not practically safe; experimentally it is so, under the circumstances I have stated, but in practice I do not think it is.

Then upon the whole, as a matter of safety, you think it has been over-rated?—I think it has, so far as I have been informed upon the subject; I do not know to what extent it may or may not have been over-rated.

You have not had much experience of its practical effects; have you seen it in mines?—I have never seen it in mines.

But supposing the case of a lamp perfectly clean, the gas free from all foreign substance, and surrounded by a glass chamber, do you not conceive that many mines might be worked with comparative safety with such an instrument, in lieu of candles?—I think they might, certainly.

A variety of pressing matter hitherto prevented us from introducing to the notice of our readers the following—

Act to amend the Laws touching Letters Patent for Inventions, passed 10th September, 1835.

Whereas it is expedient to make certain additions to and alterations in the present law touching Letters Patent for Inventions, as well for the better protecting of patentees in the rights intended to be secured by such letters patent, as for the more ample benefit of the public from the same: Be it enacted by the King's most excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, that any person who, as grantee, assignee, or otherwise, hath obtained or who shall hereafter obtain letters patent, for the sole making, exercising, vending, or using of any invention, may, if he think fit, enter with the clerk of the patents of England, Scotland, or Ireland, respectively, as the case may be, having first obtained the leave of His Majesty's Attorney General or Solicitor General in case of an English patent, of the Lord Advocate or Solicitor General of Scotland in the case of a Scotch patent, or of His Majesty's Attorney General or Solicitor General for Ireland, in the case of an Irish patent, certified by his fiat and signature, a disclaimer of any part of either the title of the invention or of the specification, stating the reason for such disclaimer, or may, with such leave as aforesaid, enter a memorandum of any alteration in the said title or specification, not being such disclaimer or such alteration as shall extend the exclusive right granted by the said letters patent; and such disclaimer or memorandum of alteration, being filed by the said clerk of the patents, and enrolled with the specification, shall be deemed and taken to be part of such letters patent or such specification in all courts whatever: provided always, that any person may enter a caveat, in like manner as caveats are now used to be entered, against such disclaimer or alteration; which caveat being so entered, shall give the party entering the same a right to have notice of the application being heard by the Attorney General or Solicitor General or Lord Advocate respectively: provided also, that no such disclaimer or alteration shall be receivable in evidence in any action or suit (save and except in any proceeding by scire facias) pending at the time when such disclaimer or alteration was enrolled, but in every such action or suit the original title and specification alone shall be given in evidence, and deemed and taken to be the title and specification of the invention for which the letters patent have been or shall have been granted: provided also, that it shall be lawful for the Attorney General or Solicitor General or Lord Advocate, before granting such fiat, to require the party applying for the same to advertise his disclaimer or alteration in such manner as to such Attorney General or Solicitor General or Lord Advocate shall seem right, and shall, if he so require such advertisement, certify in his fiat that the same has been duly made.

II. And be it enacted, That if in any suit or action it shall be proved or specially found by the verdict of a jury that any person who shall have obtained letters patent for any invention or supposed invention was not the first inventor thereof, or of some part thereof, by reason of some other person or persons having invented or used the same, or some part thereof before the date of such letters patent, or if such patentee or his assigns shall discover that some other person had, unknown to such patentee, invented or used the same, or some part thereof, before the date of such letters patent, it shall and may be lawful for such patentee or his assigns to petition His Majesty in Council to confirm the said letters patent or to grant new letters patent, the matter of which petition shall be heard before the judicial committee of the Privy Council; and such committee, upon examining the said matter, and being satisfied that such patentee believed himself to be the first and original inventor, and being satisfied that such invention or part thereof had not been publicly and generally used before the date of such first letters patent, may report to His Majesty their opinion that the prayer of such petition ought to be complied with, whereupon His Majesty may, if he think fit, grant such prayer; and the said letters patent shall be available in law and equity to give to such petitioner the sole right of using, making, and vending such invention as against all persons whatsoever, any law, usage, or custom to the contrary thereof notwithstanding: provided, that any person opposing such petition shall be entitled to be heard before the said judicial committee: provided also, that any person, party to any former suit or action touching such first letters patent, shall be entitled to have notice of such petition before presenting the same.

III. And be it enacted, That if any action at law or any suit in equity for an account shall be brought in respect of any alleged infringement of such letters patent heretofore or hereafter granted, or any scire facias to repeal such letters patent, and if a verdict shall pass for the patentee or his assigns, or if a final decree or decretal order shall be made for him or them, upon the merits of the suit, it shall be lawful for the judge before whom such action shall be tried to certify on the record, or the judge

who shall make such decree or order to give a certificate under his hand, that the validity of the patent came in question before him, which certificate being given in evidence in any other suit or action whatever touching such patent, if a verdict shall pass, or decree or decretal order be made, in favour of such patentee or his assigns, he or they shall receive treble costs in such suit or action, to be taxed at three times the taxed costs, unless the judge making such second or other decree or order, or trying such second or other action, shall certify that he ought not to have such treble costs.

(To be concluded in our next.)

### ON THE CALCINATION OF COKE.

Coke is obtained in England by two distinct processes; in the open air, and by means of ovens constructed for the purpose. The former is the method usually adopted, the latter being applied almost exclusively to the small coal or slack. In the vicinity of Dudley, in Staffordshire, all the coke is made in the open air; the process consists in forming a small conical chimney, with bricks placed in such manner, as to leave spaces between them, these openings are larger in the lower than in the upper courses, the usual height is about four feet six inches, surmounted by a cylinder of one foot. The coal is then disposed around the chimney, the largest lumps being placed first to form the base of a cone, after which more is thrown on the heap, until the top is above the level of the brick work; the whole surface is then covered with slack, with the exception of the lowest part of the heap, to about one foot high, the fire is then lighted in the chimney; at a certain period of the operation the remaining part is also covered with slack, and when the carbonization is judged to be complete the fire is extinguished, by throwing on a sufficient quantity of water and dispersing the materials of the heap.

The dimensions of the coke heaps vary considerably, they are most commonly fourteen or sixteen feet in diameter, and contain about twelve tons of coals. From the time of lighting the pile the operation is completed in seven days, three for the calcination and four for the extinction and subsequent cooling of the mass.

It would appear that a method so simple as this would be invariable in the results, nevertheless the contrary is the fact, much depending on the attention and judgment of the burner or superintendent. A ton of coal usually yields twelve cwt. of coke or sixty per cent., sometimes ten cwt. or fifty per cent. from the same materials. In South Wales both methods are practised, but the coke is not calcined with so much attention as in Staffordshire, the process differs in the heap being made in the form of a long bank four to six feet in breadth, and about three feet high, the large coals in the middle, and the fire being lighted either at one end or at several parts of the heap. At Pontypool and Abercromby the coke is calcined in the open air; the coal in some parts of this district bears a resemblance to charcoal; in converting it into coke great care is taken to preserve this entire, the operation is completed in five days. In the neighbourhood of Merthyr Tydvil the process is conducted in the open air, and although very little care seems to be given to its progress, yet a considerable quantity of coke is produced, the coal being generally dry and giving but little smoke. At Plymouth works six tons of coal yield five tons of coke; at Dowlay 720 lbs. of coal yield 450 to 500 lbs. of coke; at Pen-y-Darran the operation lasts only three days, the increase in bulk being also very considerable, three tons of coal producing twelve barrows of coke, each containing seventeen cubic feet, or above one fourth part more than previous to calcination.

At Neath Abbey the carbonization is more rapid than in any other place, it being finished in nine hours, producing rather less than sixty per cent. of coke. In Scotland, calcination in the open air is generally adopted; formerly the heaps were burned without much attention being paid to their progress, but the Staffordshire mode has been used latterly with great advantage, the heaps consisting of eighteen tons of coal, well covered with slack, kept burning three or four days, and four or five days more being allowed for the cooling of the mass, the loss in weight is about fifty per cent.; the old method occupied only five days, but the loss amounted to from sixty to sixty-six per cent. The coke is of very unequal quality, some parts being very heavy and others light and porous. In Yorkshire the coal is arranged in long banks, six feet wide, by two and a half high, with square vertical chimneys, eight or nine inches in diameter, formed with large coals, at about the distance of six feet from each other throughout the length; the loss is about fifty per cent. in weight.

Calcination in ovens is considered to produce a heavier coke than the open calcination; the process varies but little, being in all cases performed in ovens of a circular or oval form, with a low arch surmounted with a small chimney, the furnace has two doors or openings opposite to each other, sliding in a groove and raised by a lever, they are usually of cast iron, the dimensions of the furnace about twelve feet by six; height of the arch in the centre five feet, at the door twenty-one inches; the chimney rises three feet externally and about nine inches in diameter. At Neath Abbey the furnaces are smaller; the chimney is eighteen inches externally, and only one door, but in this case a hole is made in the opposite side to facilitate the clearing out of the coke. From the small coal carbonized in this manner the produce is about sixty per cent., while the same quantity of coal in the open air yields but fifty per cent., the coke from the furnace being so much more dense. At Swansea, by the same process, the produce is about fifty-four per cent.

In the vicinity of Glasgow a circular oven with one door is in use, the diameter is nine feet, height of the arch six feet. The coke is drawn out every twenty-four hours; the ordinary charges, one ton and a half of coal, rising about two and a half feet in the oven, the loss is from fifty to sixty per cent. On Saturdays the charge is increased to two tons, and is not withdrawn until the Monday. At the Lymington works, near Newcastle-upon-Tyne, all the coke is made in ovens, the usual charge is one chaldron of about two and a half tons, the operation lasts forty-eight hours, and the average loss thirty-nine per cent. The coke is screened to the diameter of about one inch, for smelting in the high furnace, the smaller portion being employed in roasting the ores. At Bradford, in Yorkshire, the method is similar to Newcastle, but the furnaces are smaller, the charge being only about one ton, the loss is about forty per cent. It is difficult to decide to which process a preference ought to be given, the loss is less in the ovens, but they require more space more attendants, and more expense, while the open carbonization is considered to yield coke better adapted for smelting in the high furnace.—*Mining Review.*

### MISCELLANEA.

**New Hydrostatic Engine.**—We have had an opportunity of examining the recent discovery made by the Rev. J. T. Porter, of the Close, of this city, which he has named an hydrostatic engine, and which, when brought to perfection, will, no doubt, vie with the astonishing power of steam. The principle upon which the engine acts is the well known law of nature, "the pressure of fluids." The construction of the apparatus is simple, consisting of four cylinders, each of them having four pistons. The double acting power of the model is put in motion by only twenty-five ounces of water, assisted by the lever. Some idea may be formed of the force of the pressure, when we say that, with the stroke of the piston of one of the cylinders, an ash bough, of an inch and a half diameter, was broken with the greatest ease. The Rev. gentleman is very sanguine as to the ultimate success of his discovery, and affirms, that a ship, laden with the usual freight, may take a trip to the East Indies and back, the engine requiring for its total supply not more than half a hogshead of spring water. From what we have seen we have no doubt that Mr. Porter will meet with success. He has our best wishes to that effect, and we beg to call the attention of the scientific world to this singular and valuable discovery. A circumstance connected with it, (not the least valuable), is, that unlike steam, not the slightest danger is to be apprehended from any accidental derangement of the machinery.—*Salisbury Chronicle.*

**Temperature of the Human Body.**—The mean temperature of the warmest place on the surface of the globe is nearly 20 degrees of Fahrenheit below the standard heat of the body; so that clothing of one sort or another seems to be requisite in every region as a defence against external cold.

**Davy Lamp.**—In the Marquis of Londonderry's Collieries alone there are nearly 900 Davy Lamps in daily use.

**Steam.**—A cubic inch of water being converted into steam will, by the condensation of that steam, raise a ton weight a foot high.—*Lardner's Steam Engine.*



Particulars.	Misc.	Tons	Total Tons.	Per Ton.	Amount.	Total Amount.
				£. s. d.	£. s. d.	£. s. d.
Tigrony .....		63		0 17 0	431 11 0	
Arrietta Pertinax .....		70		22 15 0	1562 10 0	
" ..		63	-196	23 13 0	1430 19 0	-3451 0 0
Tigrony .....		86		3 0 0	190 4 0	
Arrietta Pertinax .....		8		26 12 0	212 8 0	
" ..		2		12 11 0	31 0 0	
Ballymurtagh .....		24		5 0 0	120 0 0	
" ..		304		4 10 0	1232 0 0	
Allibee .....		76		3 18 6	754 0 0	
Comnorre .....		131	-211 1-0	0 0 0	85 0 0	-1339 11 2
Crombane .....		33		5 13 0	193 17 6	
Tigrony .....		70		6 0 0	420 0 0	
Ballymurtagh .....		49		5 0 0	125 0 0	
Comnorre .....		131	-185 5-6	5 12 0	116 5 0	-903 17 4
Crombane .....		101		4 10 0	404 10 0	
" ..		51		4 14 0	230 14 0	
Ballymurtagh .....		80		4 0 0	344 0 0	
" ..		33		5 0 0	120 0 0	
Allibee .....		96	-284 1-0	1 0 0	385 0 0	-1471 18 2
Crombane .....		23		5 13 0	193 17 6	
Cubre, per Evander .....		40		15 1 0	605 0 0	
" ..		70		16 1 0	1127 0 0	
" ..		70		5 0 0	350 0 0	
Arrietta Pertinax .....		25	-184 1-0	12 11 0	310 0 0	-275 10 0
Crombane .....		33		5 13 0	193 17 6	
Ballymurtagh .....		704	-69	4 10 0	2816 0 0	-681 7 6
Allibee .....		24		18 0 0	432 0 0	
Cubre, per Evander .....		60		15 1 0	906 0 0	
" ..		40		16 0 0	640 0 0	
Total .....		3159			471,670 0 0	



### PRICES OF SHARES.

## BRITISH MINES.

No. of Sh.	Amount paid	price	No. of Sh.	Amount sold	price.
8,000	Albion Copper	3 18 14	5,000	North Cornw. Silver	1 1 1
4,000	Bisbee Bridge	3 30 3	6,000	Perran Consols	8 121
8,000	British Tin	1 14 14	5,000	Pulbrook Consols	1 1 1
20,000	British Iron	50 37 84	5,000	Redbrook	3 4
5,000	British Copper	34 52 4	5,000	Redburn Consol.	34 4
4,000	Carn Grey	4 18 18	10,000	Redruth United	24 4
10,000	East Cornwall	1 34 3	5,000	Roche Rock	1 14 1
5,000	E. Wheal Brothers	1 34 3	5,000	South Wheal Leisure	2 2
2,500	E. Wheal Strawberry	2 7 10	8,000	St. Hilary	4 4 3
2,500	English	124 20 20	5,000	Treleigh	14 4 1
10,000	Hibernian	10 3 4	5,000	Tavistock	2 20 8
6,000	Hayle Consols	1 14 12	2,000	Wendron	5 7 74
2,000	Kerrow	1 2	3,300	West Cork	45 36 38
20,000	Min. Cons. of Ireland	7 41	5,000	Wheal Brothers	20 94

### FOREIGN MINES.

FOREIGN MINES.			
4,000 Alten .....	10 9	12,000 Mocumbas & Cocas .....	22 16 17
10,000 Anglo Mexican Ins. <i>25 pm.</i> .....	100 5 1/2	2,000 New Granada ....	3
Ditto Subscription .....	25	1,020 Penoles .....	12
2,000 Bolanos .....	150 142 144	3,050 Ditto Subscription..	14
10,000 Brazil Imp., <i>10 5 pm.</i> .....	30 27 24	11,500 Real del Monte, reg.	63 1/2
10,000 Bolivian Copper .....	30 10 11	Ditto unregistered .....	192 30
10,000 Ditto Scrip .....	3 42 5	Ditto New .....	4 1/2
10,000 Candonga .....	74 74 8	Ditto Loan Notes .....	130
10,000 Cata Branca .....	64 64	2,500 Rio de Anori .....	1 7
12,000 Cobre Copper .....	15	11,000 St. John d'el Rey .....	8 3 1/2
8,500 Colombian, <i>10 5 pm.</i> .....	544 104	30,000 Un. Mex. <i>10 2 pm.</i> .....	40 3 1/4
1,500 Ditto New .....	9	Ditto Scrip .....	3
10,000 Copiapo .....	10 11 1/2	Ditto Subscription .....	3
20,000 Gen. Min. Assoc. ....	13 9 10	Ditto New Scrip .....	5
6,135 Mexican Company .....	334 3	5,000 Un. Gold, <i>10 24 pm.</i> .....	74 22 24

## RAILWAYS.

RAILWAYS.			
660 Bolton and Leigh .....	100	5,100 Liverpool & Manch...	100
Ditto 4 Shares .....	25	5,100 Ditto 4 Shares.....	25
Bristol and Exeter .....	25	6,375 New Ditto .....	25
500 Canterbury & Whitstable ..	50	12,000 London and Blackwall ..	5 1/2
350 Cheltenham .....	100	20,000 London and Greenwich ..	20
2,000 Clarence .....	100	25,000 London & Birmingham ..	45
1,600 Crompton & Peak For. 100	50	20,000 London & Gravesend ..	1 1/2
1,000 Croydon .....	2 1/2	20,000 London & Southampton ..	15
Dublin & Kingstown .....	60	45,000 Lon. & Brighton, Gibbs' ..	1 1/2
800 Durham Junction .....	10	10,000 Ditto (Stephenson's) ..	5 1/2
1,300 Edinb. & Dalkeith Rail 50	28	3,000 Newcastle and Carlisle ..	10
2,500 Forest of Dean .....	50	28 North Midland .....	5 1/2
10,400 Grand Junction .....	40	550 Preston & Wigan .....	20
25,000 Great Western .....	5 17 1/2	2,600 Preston and Wyre .....	1
2,000 Hartlepool .....	100	1,500 Stanhope and Tyne .....	100
2,100 Hull and Selby .....	5 5 1/2	1,000 Stockton & Darlington ..	240
St. Helen's & Runc. Gap 100		South Eastern .....	2 1/2
250 Kenyon and Leigh Junc 100		5,300 Warrington & Newton ..	
7,000 Leeds and Selby .....	100	Wigan Branch .....	100

### CANALS.

CANALS.							
1,760	Ashton & Oldham	£97 18s.	162	70	Loughborough	£142 17s.	
1,462	Ashby-de-la-Zouch	119	65		Manch. Bolton & Bury	48	33
720	Barnsley	160	275	2,460	Monmouthshire	160	180
1,250	Basingstoke	100	54	700	Montgomeryshire	100	100
1,605	Brecknock & Abergav.	130	85	250	Melton Mowbray	100	190
4,000	Birmingham & share	173	357	500	Mersey and Irwell	100	580
4,000	Do. & Liverpool Junction	100	304	3,000	Macclesfield	100	55
477	Bolton and Bury	250		247	Neath	100	300
600	Bridgewater & Taunton	100	64	100	Nene Navigation Bds.	100	100
400	Chelmer & Blackwater	100	102	1,785	Oxford	100	600
500	Coventry	100		523	Oakham	130	38
460	Comford	100	300	2,400	Pack Forest	78	105
4,546	Croydon	317 2s. 10d.		2,520	Porthsmouth & Arundel	80	150
11,810	Daily Bonds			21,418	Regent's	£3 16s. 8d.	134
2,060	Dudley	100	764	5,069	Rochdale	85	112
600	Derby	100	120	500	Shropshire	125	140

## 162

Edinboro & Glas. Un. ....	56	50	808 Somerset Coal .....	150	160
Ditto Allocated .....	95	65	45,006 Do. Lock Fund .....	128	12
3,875 1/2 Do. Collieries .....	135	85	100 Do. W. Gloucester .....	149	62
30,000 Danube and Mayne. ....	5	91	500 Shrewsbury .....	125	45
231 Erewha .....	100	100	300 Stourbridge .....	143	230
1,297 Forth and Clyde. ....	400	165	5,647 Strat.-on-Avon & 79 gs. sd. ....	39	
11,500 Grand Junction. ....	100	123 1/2	300 Stroudwater .....	158	525
2,841 Grand Union .....	100	24 1/2	533 Swansea .....	100	215
1,521 Grand Surrey .....	100	100	3,762 Severn & Wye & Railw. ....	35	18
20,000 Do. (optional) Loan .....	100	100	1,306 Thames & Severn, black 100	30	
3,000 Grand Western .....	100	175	300 Ditto, W. & A. red .....	100	30
600 Glamorgansh. ....	13	4	2,604 Trent & Mersey .....	100	620
1,060 Gloucester & Berkley. ....	100	15	350 Tavistock, (Mineral). ....	100	
369 Do. (optional) Notes. ....	60	30	6,149 Thames & Med. & 19 gs. sd. ....	3	2
749 Grandtham .....	150	202	Ditto, new .....	100	3
6,238 Huddersfield .....	257	68. 6d. 30	Thames and Isis .....	100	
100 Kensington .....	100	10	1,008 Sh. 1,000 1/2 Warwick & Bir. ....	100	280
355,328 Kennet & Avon & 39 188,103. ....	30	4	900 W. Warwick & Naptun .....	100	250
1,600 Kent & Southwicks .....	75	74	6,900 Worcs & Naptun .....	100	250
2,902 1/2 Leeds & Liverpool .....	100	53	29,000 Wylts & Berks & 0, 186. 8d. ....	30	20
645 Leicester .....	140	150	800 Wylts & Easington .....	135	75
907 Leeds & Northamp. ....	834	79	126 Wisbeach .....	105	45
550 Lineard & Looe Union .....	25	25	905 Wey and Arun .....	110	224

Dr. ...

DOCKS.			
3,000 £1054 Commercial	166 58 1	576 Freshstone Harbour	50
99,057 East India	Stock 95	15,900 Ditto Bonds	50
1,038 East Country	100	1,352,752 St. Katherine	Stock 85 1/2
338,310 London	Stock 58 1/2	200,000 Ditto Bonds	104
Ditto Bonds		500,000 Do. Bonds for 1845	101 1/2
390,000 West India	Stock 103	Shorcham Harbour	50
2,309 Bristol	£147 98 5/8	2,500 Deptford Pier	3 1/2
56,324 Ditto Notes	116	1,000 Herne Bay Pier	50

Stock 103  
147 98 85

ASSURANCE COMPANIES					
2000	Athlon	50	76½	Insur. Comp. of Scot.	10
50,000	Alliance Brit. & For.	10	11½	2,000 Kent Fire	50
50,000	Ditto Marine	5	5½	Ditto Life	70
24,000	Atlas	5	13 1/2	10,000 Law Life	50
20,000	British & Foreign	5	10½	Liverp. Marine Assn.	25
20,000	British Fire	50	40	3,900 London Fire <i>ex. dir.</i>	12½ 1/2
12,000	Calcutta Commercial	5	6½	31,000 London Ship	12½ 1/2 1/2
5,000	Calcuttan Fire	10	13	North British	10 23½
	Fire, Med. & Genl.	5	10	Ocean	10 19½

Ed. & Gen. Life	24	38
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10,000	County County	10 142	30,000	Palladium Life	2 3 2
10,000	County	5 6	250,000	Protector Fire	2 12 1
200	Economic Life	250 315	2,600	Provident Life	10 19 1
	Edinburgh Life	19 14	100,000	Rock Life	3 6 4
2,571	Economic Life	30 22	692,230	Royal Exch. Stock <i>ex d.</i>	1 192
50,000	Edinburgh Life	2 12		Scottish Union	1 10
000,000	Globe	151		Sun	210
20,000	Guardian	20 33		Union	20
	Hercules	10 11	6,000	University Life	5 5
40,000	Hope	3 6	50,000	United Kingd. Life	2
2,400	Imperial Fire	50 120		Westminster Life	1000
7,500	Imperial Life	10 91		West of Scotland	10 9
12,438	Indemnity Marine	104 154			
<b>JOINT STOCK BANKS.</b>					
5,000	Australasia	35 554	5,000	Lancaster	20 80
	Bank of Scotland	202 2	25,000	Liverpool	10 17
10,000	Bank of Birmingham	10 15	50,000	Manch. & Liver. Dis.	15 25
10,000	Birmingham Bank	5 14	20,000	Manchester	20 35 1
	British Linen Comp.	100 240	30,000	National	10 14 1
	Commercial	100 170	20,000	Nat. Bank of Ireland	10 13
	Equitable Loan Comp.	9 10	10,000	National Prov. Eng.	25 25
10,000	Glostershire	5 11		North & Cent. B. of Eng.	10 11 1
6,000	Manchester	5 11	20,000	North & Cent. B. of Eng.	25 43 1
	Glasgow Union	50 50		Royal of Scotland	100 170
10,000	Hibernian	25		Western of Scotland	20
19,000	London & Westminster	15 154			

## GAS LIGHT AND

GAS LIGHT AND COKE COMPANIES.					
5,000	Alliance	1	Great Yarmouth	9	18
500	Bath	16	35	Greenw. Railway Gas	10
600	Bristol	23	10,000	Imperial	50
5,000	British	16	31 1/2	Ditto Konds	20
5,000	Ditto Provincial	19	32 1/2	Ipswich	10
844	Birmingham	20	105	Isle of Thanet	30
3,400	Birm'g. & Staffords.	30	90	Independent	30
600	Brentford	30	30	Leicester	50
4,250	Bristol	30	40	Doth Coal Gas	
1,500	Ditto	19	13 1/2	Liverpool	20
750	Ditto	16	13	Ditto "A" Coke	100
2,711	Brighton, General	21	90	Ditto "New ditto"	60
203	Carlisle	25	90	Maidstone	30
4,000	Continent, Consolid.	21	90	Flornis	30
249	Canterbury	50	50	Portico	60
	Chelmsford	30	42	Poplar	30
300	Cheltenham	30	75	Ratcliff	80
1,000	City of London	100	100	Rochdale	15
1,000	Ditto new	50	116	South Metropolitan	14
800	Coventry	25	35	Sheffield	16
300	Derby	30	30	Shrewsbury	10
180	Dover	30	30	Swansea	50
700	Dunfer	30	31 1/2	United General & Co.	50
	Edinburgh Gas	25	63	Warwick	50
	Edinbro' & Alloa	14	14	Walsley	30
940	Exeter	30	30	Warrington	30
	Equitable	40	30	Westmins. Chartered	50
6,000	European	5	41	Ditto new	10
	Glasgow	60	60	Yarmouth	18

## PRICES OF SHARES CONTINUED.

## WATER-WORKS.

No. of Sh.		Amount paid.	price.	No. of Sh.		Amount paid.
4,800	Birmingham.....	25	36	1,500	N. Riv. Lond. & W. Va. ....	100 00
121	Colchester.....	100		6,485	Manchester & Salford .....	100 00
	Cranton Hill.....	25			Portsea Island.....	100 00
4433	East London.....	100	131	1,500	Portman & Farlington.....	36
	Glasgow.....	50		350	Ditto, new.....	36
4,560	Grand Junction.....	41	53	1,000	Vauxhall, late S. Lon. ....	100 00
	Edinb. Joint Stock.....	25	34	8,300	West Middx.....£60 13s.	100 00
2,000	Kent.....	100	45	1,360	York Buildings.....	100 00
388	Liverpool Bootle.....	220	10			

## BRIDGES

1600 Hammersmith.....	50/23	5,000 Waterloo .....	100/20
7231 Southwk. old..	£63 2s. 8d. 2	5,000 Do. old Ann. of £8..	60/20
1700 Do. New of 7 1/2 per ct.	50/14	5,000 Do. new ditto of £7	60/20
6000 Vauxhall . . .	£70 10s. 3d. 22	60,000 Ditto Bonds.....	

### LITERARY INSTITUTIONS

Adelaide Gal. of Sci.	50	700 Russell .....	25
1000 Lon. with Bronze Tick	75 20	King's College.....	100 00
1500 London University..	100 25		

### MISCELLANEOUS.

10,000	Anglo Mex. Mint	100	2,500	Essex Marine Salt	100
10,000	Australian Agriculture	250	13,000	Gen. Steam Nav. Co.	13
1,080	Auction Mart	50		Huds. Bay Stock ex. d.	20
8,600	Brit. Rock & Pat. Salt	35	2,000	Lon. Com. Sale Rooms	75
	British Annuity	50		New Corn Exchange	75
6,600	Brit. Amer. Land Comp.	13		New Brunswick (Land)	20
10,000	Canada Company	31		Mexican, &c.	2
200,000	Upper Canada Consol.	250	12,000	Pat. Purifying Sea Wat.	2
	Carron Iron Company	250	10,000	Rio Doco	3
	City Bonds, 4 per Cent	100		Ever. Interest. Soci.	100
	Central America (Land)	20	2,633	Ditto News Agency	30
75	Cov. Gar. Thea. Rent	50		Shotts Iron Foundry	30
300	Drury Lane ditto	500	4,000	Thames Tunnel	100
2,122	Ditto Proprietors	100	10,000	Van Diemens Land	100
	Edin. & Leith Glass	10			

### PRICES OF SHARES AT LIVERPOOL.

	£	s	d.			£	s	d.
Liverpool Coal Gas .....	310	0	0	London & Birm. ditto	45	104	0	0
Liverpool New Gas and Coke Company .....	150	0	0	Bank of Liverpool ..	20	10	0	0
New Shares premium ..	50	105	0	Bank of Manchester ..	15	28	10	0
Liverp. & Har. W. Works	465	0	0	Manchester & Liverpool District Bank ..	15	25	0	0
Booth ditto .....	310	0	0	Com. Bank of Liverpool	15	18	0	0
Exchange Buildings ..	170	0	0	Liverp. Mar. Ass. Co.	25	18	0	0
Liverp. & Man. Railway	100	229	0	Oldh. G. L. & Waterw.	10	10	10	0
Ditto old quarters .....	25	35	10	Manch. F. & L. Ass. Co.	10	0	0	0
Ditto new quays .....	25	70	0	Ocean Assurance Co.	10	11	5	0
Bolton & Leigh ditto	100	25	17	Northern and Central Bank of England ..	10	12	15	0
Warrington & Nwst. do.	100	161	0	Woodside, Birkenhead, and Liverpool Steam Ferry Company .....	5	0	0	0
Kenyon & Leigh do. ....	100	110	0	Leeds & Manchester R.	5	0	15	0
Wigan Branch ditto .....	100	107	0	Union Bank, Liverpool	10	16	10	0
Preston & W. North Union Line ditto .....	40	44	0	North Midland Railway	5	0	15	0
St. Helens and Runcorn Gap ditto .....	100	26	0	Com. Bank of England	5	0	15	0
Leices. & Swanning. do.	50	55	0	Midland Counties do.	2	3	10	0
Stockton & Darling. do.	100	298	0	Kellewies Copper, Lead & Silver Mines	1	3	10	0
Manch. Bolton, & Bury Railway and Canal ..	48	45	15	W. Tres. Tin Mine .....	1	0	10	0
Leeds & Selby Railw. ....	100	0	0	Glouce. & Birm. Rail.	5	0	10	0
Grand Junction ditto ..	40	90	10	Edinb. & Glasg. W.	1	0	10	0

### PRICES OF METALS, &c.

	<i>d.</i>	<i>s.</i>	<i>d.</i>		<i>d.</i>	<i>s.</i>	<i>d.</i>	
Copper, British, Cakes, <i>ton</i> .....	56	0	0	Tin in Bars .....	5	3	0	
Sheets .....	lb.	0	0 11	Grain Blocks .....	5	10	0	
Bottoms .....	0	1	0	Broken .....	5	10	0	
S. American .....	0	0	0	Banca .....	<i>bd.</i>	<i>cut.</i>	50	
ron, British, Pigs .....	6	10	0	Straits .....	10	0	0	
Bars .....	<i>ton</i>	10	10	Plates, per box of 225 sheets	0	0	0	
and Rods .....	11	0	0	1 C 124 by 16 in.	1	10	0	
Hoops .....	11	0	0	1 X .....	2	4	0	
Plate .....	0	15	0	1 X X .....	161	2	0	
Cargo at Cardiff .....	10	0	0	XXXX .....	3	16	0	
Foreign <i>bd.</i> C.C.N.D. ....	18	0	0	XXXXX .....	293	3	0	
P.S.I. ....	14	10	0	II. C. .... 124 by 92 105	1	10	0	
Swedish .....	13	10	14	0 0	133	3	0	
Lead, British .....	<i>ton</i>			III. C. .... 122 by 94	98	1	14	
Pigs .....	<i>ton</i>	20	10	0 0	126	2	0	
Sheet, milled .....	<i>ton</i>	21	0	Sm. { <i>SDC</i> .....	15 by 11.	167	3	0
Bars .....	20	10	0	Dbl. { <i>SDX</i> .....	200shs.	168	3	0
Shot, Pat. 1 to 5 .....	23	0	0	XXXX .....	259	3	10	
6 to 12 .....	23	10	0	SDXXX .....	239	0	0	
Red or Minium .....	22	10	0	SDXXXX .....	251	4	0	
White .....	26	10	0	C. .... 162 by 124	98	1	14	
Litharge .....	22	10	0	Dbl. { <i>XX</i> .... 100 sheets	126	2	0	
Pig, Spanish .....	<i>ton</i>	19	10	0	147	3	0	
Steel, Milan .....	<i>bd</i>	30	0	0	108	2	13	
Swedish <i>bd.</i> ....	<i>ton</i>	19	0	0	189	2	10	
Tin in Blocks .....	<i>cut.</i>	5	1	0	XXXX, 14 by 16 .450s.	—	0	0
Ingots .....	1	0	0					
Wasters of No. 1. C. No. 1. X, and No. 1.				XX, 3s. per box less than perfect plates				
All other sorts of Wasters 6s. per box less.				Duty and shipping charges 6d per box.				
SPELTER .....	17	0	0	0 0 to 0 0 0 0	2s. <i>cut.</i>			
Sheathing .....	31	0	0	0 0 — 0 0 0 0	10s.			
PLATINA ORE .....	08.	0	0	10 0 — 0 0 0 0	5 per cent.			

**COAL MARKET LONDON.**

JANUARY, 1896.

QUALITY.		PER TON.		QUALITY.		PER TON.			
	Jan.	1164	1364	1644		Jan.	1164	1364	1644
Newcastle.		s. d. d. s. d. d.			Newcastle.		s. d. d. s. d. d.		
Malr's		18	6	18	6	Lanchester Stanhope Cy.		19	0
ensham		18	9	18	9	Newmarch		19	0
ars Hartley		19	0	19	0	Perkins		19	0
hester		19	0	19	0	Riddell's		21	0
ast Percy		20	0	20	0	Walker		21	0
ebburn Main		21	0	21	0	Waldrige		21	0
lywell Reins		18	0			Sunderland.			
care's Main		18	0			Bell's Primrose		17	0
nte's Redheugh		18	0			Braddyll Richmond Main		21	0
out Windoor		19	0			W. E. Braddyll's Hetton		22	0
tt's South Moor		18	0	18	0	Hetton		22	0
etion		18	0	18	0	Lambton		22	0
assell's High Main		18	3			Russell's Hetton		22	0
outh Hartley		19	0			Stewart's		22	0
unfild Moor		21	0	21	0	Hartlepool.			
est Hartley		20	0	20	0	W. E. Braddyll's Hetton		22	0
illington		20	0			Stockton.			
ylam		20	0	20	0	W. E. Adelaide		21	0
E. Hewick and Co.		21	0	21	0	Gordon		22	0
Chilton		17	0			Tees		22	0
Carr and Co.		20	0			Blythe, Scotch, Welsh,			
Clark and Co.		19	0			and Yorkshire.			
Gosforth		21	0	21	0	Stanley Main		20	0
Heatup		20	0			Thorne's Gawber Hall		17	0
Hutton		21	0			Thorne's Gawber Hall		17	0
Hildon		21	0	21	0	Tranent		18	0
Killingworth		21	0	21	0				

## METEOROLOGICAL JOURNAL 1895 3

METEOROLOGICAL JOURNAL, 1880-9					
January.	Thermometer.	Barometer.	January.	Thermometer.	Barometer.
Monday 7	from . 29 to 46	29.93 to 29.86	Monday 14	from . 28 .. 32	29.62 to 29.61
Tuesday 8	.... 29 .. 46	29.91 .. 29.91	Tuesday 15	.... 28 .. 36	29.74 to 29.73
Wednesday 9	.... 23 .. 34	29.94 .. 29.93	Wednesday 16	.... 28 .. 35	29.75 to 29.74
Thursday 10	.... 23 .. 34	29.94 .. 29.93	Thursday 17	.... 28 .. 35	29.75 to 29.74
Friday 11	.... 23 .. 34	29.94 .. 29.93	Friday 18	.... 28 .. 35	29.75 to 29.74
Saturday 12	.... 23 .. 34	29.94 .. 29.93	Saturday 19	.... 28 .. 35	29.75 to 29.74
Sunday 13	.... 23 .. 34	29.94 .. 29.93	Sunday 20	.... 28 .. 35	29.75 to 29.74
Monday 14	.... 23 .. 34	29.94 .. 29.93	Monday 21	.... 28 .. 35	29.75 to 29.74
Tuesday 15	.... 23 .. 34	29.94 .. 29.93	Tuesday 22	.... 28 .. 35	29.75 to 29.74
Wednesday 16	.... 23 .. 34	29.94 .. 29.93	Wednesday 23	.... 28 .. 35	29.75 to 29.74
Thursday 17	.... 23 .. 34	29.94 .. 29.93	Thursday 24	.... 28 .. 35	29.75 to 29.74
Friday 18	.... 23 .. 34	29.94 .. 29.93	Friday 25	.... 28 .. 35	29.75 to 29.74
Saturday 19	.... 23 .. 34	29.94 .. 29.93	Saturday 26	.... 28 .. 35	29.75 to 29.74
Sunday 20	.... 23 .. 34	29.94 .. 29.93	Sunday 27	.... 28 .. 35	29.75 to 29.74
Monday 21	.... 23 .. 34	29.94 .. 29.93	Monday 28	.... 28 .. 35	29.75 to 29.74
Tuesday 22	.... 23 .. 34	29.94 .. 29.93	Tuesday 29	.... 28 .. 35	29.75 to 29.74
Wednesday 23	.... 23 .. 34	29.94 .. 29.93	Wednesday 30	.... 28 .. 35	29.75 to 29.74
Thursday 24	.... 23 .. 34	29.94 .. 29.93	Thursday 31	.... 28 .. 35	29.75 to 29.74
Friday 25	.... 23 .. 34	29.94 .. 29.93	Friday 1	.... 28 .. 35	29.75 to 29.74
Saturday 26	.... 23 .. 34	29.94 .. 29.93	Saturday 2	.... 28 .. 35	29.75 to 29.74
Sunday 27	.... 23 .. 34	29.94 .. 29.93	Sunday 3	.... 28 .. 35	29.75 to 29.74
Monday 28	.... 23 .. 34	29.94 .. 29.93	Monday 4	.... 28 .. 35	29.75 to 29.74
Tuesday 29	.... 23 .. 34	29.94 .. 29.93	Tuesday 5	.... 28 .. 35	29.75 to 29.74
Wednesday 30	.... 23 .. 34	29.94 .. 29.93	Wednesday 6	.... 28 .. 35	29.75 to 29.74
Thursday 31	.... 23 .. 34	29.94 .. 29.93	Thursday 7	.... 28 .. 35	29.75 to 29.74

Prevailing winds S.E. and S.W. except the 19th and 13th, generally cloudy in on the afternoon and evening of the 7th and 11th, and snow on the evening of the 9th and 10th. Rain fallen, 83 of an inch.

HIGH WATER AT LONDON BRIDGE, from Jan. 16 to Jan. 23.

	Sat.	Sun.	Mon.	Tues.	Wed.	Thur.	Frid.
Morning.....	0 41	1 40	2 31	3 20	4 6	4 49	5 10
Evening.....	1 12	2 6	2 56	3 44	4 27	5 19	5 44

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